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ABSTRACT

This multi-age integrated teaching unit on weather was developed by 19 rural teachers (grades K-8) from 12 Gallatin County (Montana) districts to associate all school subjects with a common theme, promote teaching efficiency by focusing on more than one subject at the same time, and increase student excitement. Topics explored by each grade level are seasons (grades K-1), effects of the weather on us (grade 2), precipitation (grade 3), clouds (grade 4), weather recording-forecasting (grade 5), water (grade 6), climates and global effects (grade 7), and occupations (grade 8). Core activities are outlined for each grade level in reading/language arts, mathematics, science, social studies, art, music, and physical education. The lesson plans consist of a general focus statement, specific behavioral objectives, designated classroom activities, lists of materials needed, and a teacher log section. Lists of vocabulary words are included in each unit with some coded to a key for word attack through structural analysis. Accompanying each unit is a list of available resources, both material and human. Evaluation worksheets to be utilized when assessing student performance on specific objectives are included. (NEC)

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ED269182

WEATHER

A Multi-Age, Integrated Subjects Curriculum Unit

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Rural Schools Integrated Curricula Project

Generated by the Gallatin County Rural Schools and the Teachers' Resource Center, College of Education, Montana State University

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William D. Hall
Project Director

September 1985

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RC015683

RURAL SCHOOLS INTEGRATED CURRICULA

SUMMARY

Nineteen rural teachers (K-8) from twelve districts located in Gallatin County, Montana, participated in a year long inservice project on developing thematic, multi-age, integrated subject curriculum units.

There were four phases to the project. Phase 1 consisted of three, day long inservice sessions that focused on basic skills in language arts, science and mathematics. These sessions were carried out so that the participants would be better able to incorporate basic skills development into the curriculum units they would be developing later in the project. Phase 2 consisted of learning a process for developing the integrated teaching units and actually developing them. The format followed for developing the units consisted of: 1) selecting a broad based theme; 2) developing a rationale statement justifying why the unit should be taught; 3) identifying appropriate sub-themes for the selected unit theme, by grade level K-8; 4) generating core activities by subject for reading/language arts, mathematics, science, social studies, art, music and physical education. These core activities outlined the possible scope of the unit; 5) writing lesson plans that specifically relate back to the identified core activities. These lesson plans consisted of a general focus statement, specific behavioral obectives, designated classroom activities, materials needed lists and teacher log section; 6) generation of appropriate vocabulary to be taught for each sub-unit; and 7) identification of resources needed, both material and human. The curriculum development phase of the project consisted of seven, all day sessions, with numerous, out of class hours of work. The culmination of this effort were four teaching units, entitled: 1) Gallatin History - Past to Present; 2) Oceans; 3) Outer Space; and 4) Weather.

Phase 3 brought three elementary education professors from Montana State University out to the rural schools to field test the units in the rural schools. Specific parts of each unit developed were selected, and then team or co-taught with the participating rural teachers in the project.

Phase 4 brought selected rural teachers to the campus of Montana State University so they could speak with college classes in teacher education about these types of units, and the benefits of teaching with thematic, multi-age, integrated subject curriculum units.

The benefits of utilizing this type of teaching-curriculum approach include: A more unified approach to teaching and learning, since all of the school subjects are associated to a common theme; efficiency of time because more than one subject can be taught at the same time; multi-age teachers involving all of their students, whatever their grade, in fairly common topics (the theme threads throughout each sub-unit); and increased excitement on the part of the students.

As a result of the Northwest Area Foundation funding the Rural Schools Integrated Curricula Project for $10,000, representative rural teachers of Gallatin County, Montana, have learned a process for developing these kinds of teaching units and copies of each of the four units developed have been distributed to each participating school. In addition, three copies of each unit will also be housed in the Teachers' Resource Center on the campus of Montana State University, for checkout purposes, for teachers located anywhere in the state of Montana.

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* This table of contents only lists the order of the contents with reference to a tab number. Page numbers are not included. Each section and step is designed so that additional material can be added in the future, thus making the traditional numbering of pages useless. As teachers use and expand this resource, they only need to add on to the specific section they are concerned with. For example, if an additional science lesson is written for one of the sub-units, you simply place it at the end of the already developed science lessons in that sub-unit. This does not affect the numbering system, since each subject area always begins with page 1.

PREFACE

By design, this K-8 multi-age, integrated subject teaching unit will always be able to be expanded. The theme, " Weather," is broad in scope and when coupled with all of the school subject areas, offers limitless options for expansion.

This unit outlines the theme so that a teacher can begin to teach with it. As the teacher envisions additional lessons and/or ideas, he/she can add to the already existing material. It is suggested that as teachers expand these units, they follow the format provided.

The unit is organized in the following way:

I.	Rationale	The statement justifying the need to teach the unit.
II.	Sub-units	Sub-strands of the original theme organized by grade level or range.
III.	General Objectives	Broad goals for the unit.
IV.	Core Activities	Specific types of activities, by subject, to be developed in the lesson plans. These core activities form the overall broad scope of the unit.
V.	Lesson Plans	Specific plans for teaching, that designate behavioral objectives, procedures to follow, materials and a section for teacher notes.
VI.	Vocabulary	Lists of vocabulary words are included in each unit. Sometimes these words are developed and listed with each sub-unit, and at other times they are listed only at the end of the entire unit. Some vocabulary lists are coded to a key for word attack through structural analysis. This key is located with the vocabulary lists.
VII.	Resources	Accompanying each unit is a list of available resources, both material and human, that can be utilized with the respective unit.
VIII.	Evaluation	A form to be utilized when assessing student performance on specific objectives.

ACKNOWLEDGEMENTS

I wish to especially thank all of the teachers involved in this project, for their tireless efforts and patience as they worked throughout the year. Special thanks to Vanetta Burton, who spent countless hours typing this material into our word processing system. It's amazing that you could keep all of this organized. Special acknowledgement is due Peg Nelson, who assisted in the editing of this material. Without your help this project would have been much more difficult to complete. We all appreciated the contributions made by Dr. Gerald Sullivan and Dr. Paul S. Markovits, who helped make sense out of the language arts and sciences. And, thank you Margaret Brown, Gallatin County Superintendent of Schools, for your cooperation in making this project possible. Thank you all.

We are also indebted to the Northwest Area Foundation, for funding this inservice project. Without your financial support, this project would not have been possible.

W.D.H.

PARTICIPANTS

The following teachers met throughout the 1984/85 school year to participate in the "Rural Schools Integrated Curricula" Project. This inservice project culminated with the development of teaching units on Gallatin History - Past to Present; Oceans; Weather and Outer Space.

Sandy Visser	Amsterdam School
Nancy Drusch	Amsterdam School
Sandra Hale	Anderson School
Molly Siddoway-King	Gallatin Gateway School
Lyn Morton	Gallatin Gateway School
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Dr. William D. Hall	Project Director Curriculum Development/Mathematics Education Department of Elementary Education Montana State University
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UNIT: WEATHER

Grade Levels K-8

Step I. Rationale:

Weather affects every facet of our lives. The living environment, leisure activities, occupational decisions, and emotional well being are all influenced by weather. By studying weather, students are given the opportunity to understand their total environment and how this natural force influences their lifestyle.

Step II. Sub-units:

Grade	Sub-Units
K-1	Seasons
2	Effects of Weather on Us
3	Precipitation
4	Clouds
5	Weather Recording - Forecasting
6	Water
7	Climates and Global Effects
8	Occupations

UNIT: WEATHER

Step III. General Objectives

1. To develop an understanding of the four seasons and the weather patterns associated with each.
2. To develop an awareness of weather and climate and the effect they have on lifestyles.
3. To analyze the different forms of precipitation.
4. To provide a learning laboratory to focus on cloud formations.
5. To develop an understanding of the necessity and techniques used in weather forecasting.
6. To appreciate the cycles on earth and how weather plays an integral part in the continuation of each.
7. To develop an appreciation for the natural recycling processes of the planet.
8. To recognize climatic regions of the world and understand weather patterns within each region.
9. To understand the occupations that relate to weather.
10. To understand how weather effects world economy.
11. To develop an awareness of severe weather conditions.

UNIT: WEATHER

Step IV. Core Activities: Seasons (Grades K-1)

A. & B. Reading and Language Arts

1. Select and read various books about seasons.
2. Develop vocabulary charts.
3. Practice sequencing activities of events.
4. Form spelling lists from vocabulary lists.
5. Write experience chart stories.
6. Learn beginning and ending sounds of words from vocabulary charts.
7. Act out a story.
8. Describe textures of seasonal objects (i.e., mystery box).

C.
1. Practice working with calendar (understands days, months, etc.).
2. Identifies: sets, numbers, numberals, 0-10.
3. Adds and subtracts facts, 0-18.
4. Classifies and sequences objects (i.e., leaves).
5. Writes number sentences for pictured and non-pictured story problems.
6. Introduce, develop and practice concept of place value - base 10.
7. Compares numbers using greater than and less than () ().
8. Recognize odd and even numbers.

D. Science

1. Identify and describe weather conditions typical of various seasons of the year.
2. Collect and record information about daily weather conditions.
3. Discuss and explore growing seasons.
4. Plant a garden, (indoor or outdoor), and make observations.
5. Study wooly catapillers to develop concept of seasons.
6. Recognize animal habits in each season.
7. Observe and communicate how animals adapt to their environment.
8. Explore and develop sensory awareness.

E. Social Studies

1. Use a calendar to match seasons with specific months.
2. Identify holidays and events that occur during specific seasons.
3. Recognize different types of clothing worn during specific seasons.
4. Visit a farm in spring to witness new growth.

F. Art

1. Make a seasonal collage.
2. Paint pictures of the seasons using various media.
3. Identify colors common to the seasons and create pictures using those colors.
4. Finger paint to music portraying seasons.
5. Create snow sculptures outside, (winter activity).
6. Describe various textures of seasonal objects, (leaves, snow, etc.).
7. Start a class scrapbook of seasonal activities.
8. Make or decorate kites.

Step IV. Core Activities: Seasons (Grade K-1) continued

G. Music

1. Listen to seasonal music.
2. Sing songs and keep beat to music.
3. Learn and sing songs about seasons.

H. Health and Physical Education

1. Moves in time to music.
2. Use body language to express various seasons.
3. Play games related to seasons.

UNIT: WEATHER

Step IV. Core Activities: Effects of Weather on Us (Grade 2)

A. Reading

1. Select books, periodicals, newspaper articles.
2. Read orally to class.
3. Develop class vocabulary chart.
4. Using weather words, develop rhyming word and word family concepts.
5. Develop comprehension skills by predicting outcomes.
6. Practice sequencing activities.
7. Students find nursery rhymes and read orally to class.
8. Develop comprehension by reading short paragraphs and have students tell the main idea.

B. Language Arts

1. Write creative stories.
2. Write class experience chart story.
3. Make journal entries.
4. Write a sentence weather report on board each day.
5. Create word searches using vocabulary words.
6. Form spelling lists off vocabulary list.
7. Write letters to children living in different climate and compare lifestyles.
8. Write non-sense sentences; read to classmates and have them tell what makes it wrong.
9. Write questions about weather related pictures then ask each other your questions.
10. Memorize and recite poems.
11. Give oral directions to class on how to do something.
12. Write poems and compile a class book.

C. Math

1. Write and work story problems.
2. Introduce and develop appropriate measurement systems.
3. Construct bar graphs.
4. Practice telling time.
5. Record daily temperature at regular intervals.
6. Introduce technique of estimating and predicting.
7. Practice counting money.

D. Science

1. Communicate the interrelationships between man, weather, plant and animal life.
2. Use simple weather instruments and maps.
3. Introduce the water cycle and its importance to us.
4. Collect and record information about daily weather conditions.
5. Identify and describe weather conditions typical of each season of the year in our area.

Step IV. Core Activities: Effects of Weather on Us (Grade 2) continued

E. Social Studies

1. Take fieldtrip to airport; observe weather data being collected and used.
2. Invite resource people to speak on how weather affects their life, (pilot, farmer, construction worker).
3. Identify types of clothing needed for various types of weather and compare differences.
4. Recognize how weather affects type of homes people live in.
5. Classify hobbies and recreation according to seasons.
6. Compare differences in traveling during each season of the year.
7. Introduce concept of differing climates in world by using globe.

F. Art

1. Illustrate creative stories and/or class book of poetry.
2. Construct mural depicting effects of weather on recreation.
3. Paint a poster depicting the seasonal changes in a tree.
4. Make individual weather clocks.
5. Construct weather vanes.
6. Ice or snow sculpture.
7. Make an ice mobile.
8. Make snowflakes with materials other than paper (pipe cleaners, twigs, etc.).

G. Music

1. Sing songs.
2. Play musical games.
3. Using familiar tunes, students make up lyrics.
4. Play rhythm instruments.

H. Health, Physical Education and Recreation

1. Discuss effects of weather on people's eating habits.
2. Describe recreational activities affected by weather.
3. Hold a Winter Olympics.
4. Play relay games.

UNIT: WEATHER

Step IV. Core Activities: Precipitation (Grade 3)

A. & B. Reading and Language Arts

1. Read fictional and factual stories related to precipitation.
2. Analyze the word precipitation and other related vocabulary using structural analysis and a pronunciation guide.
3. Use vocabulary words in sentences (student written).
4. Make a word search with vocabulary words.
5. Alphabetize vocabulary words.
6. Master the spelling of vocabulary words.
7. Write a journal including information on the day's precipitation and how you felt that day.
8. Listen to a tape of sentences using vocabulary words and write them using correct spelling and punctuation.
9. Write a poem about a form of precipitation.

C. Mathematics

1. Develop metric and standard measuring skills.
2. Measure precipitation using both the standard and metric systems.
3. Introduce decimals rounded to the nearest tenth.
4. Compute the daily record of precipitation which will involve adding more than two numbers.
5. Compare the amount of weekly precipitation.
6. Compare the precipitation of different areas.
7. Construct a bar graph recording the precipitation.
8. Write and solve two step story problems involving precipitation.
9. Study patterns in snowflakes.
10. Identify the geometric shapes found in both natural and student made snowflakes.
11. Investigate the concept of fractions.

D. Science

1. Identify and compare the average amount of precipitation for each season of the year in two very different states.
2. Acquire an understanding of the water content of the various kinds of precipitation.
3. Describe what happens to precipitation.
4. Perform an experiment that illustrates how precipitation forms.
5. Describe how acid rain is carried by rain clouds.

E. Social Studies

1. Describe how we depend upon precipitation for our food sources and recreation.
2. Construct a map showing the amount of precipitation in the U.S.
3. Describe how families and children live, work, and play in an area of extremely high precipitation or lack of precipitation.
4. Understand the customs developed around seasons due to precipitation.

UNIT: WEATHER

Step IV. Core Activities: Precipitation (Grade 3) continued

F. Art

1. Construct puppets for a fictional story about rain, snow, sleet, or hail.
2. Create a painting during a rainstorm.
3. Experiment with creating a new art form using precipitation.
4. Learn how raindrops and rainbows are related.

G. Music

1. Listen to and sing songs about various forms of precipitation.
2. Listen to the sounds that surround a rainstorm and create a rainstorm "symphony" using children made instruments (or a selection of school instruments).
3. Create the rythm heard during a rainstorm or hailstorm.

H. Health and Physical Education

1. Compare the qualities of rain water and well water with reference to health products.
2. List and participate in the many kinds of recreation that rely on a form of precipitation.
3. Create rhythmic movements that give an overall feeling of a rainstorm.

UNIT: WEATHER

Step IV. Core Activities: Clouds (Grade 4)

A. Reading

1. Perform a phonetic analysis of the vocabulary dealing with clouds.
2. Perform a structural analysis of the vocabulary dealing with clouds.
3. Read and organize (outline) information read from informational articles about clouds.
4. Skim for specific information on clouds.
5. Read a fictional story about clouds.

B. Language Arts

1. Compose a poem while outside viewing clouds on a warm day.
2. Write an essay on a certain type of cloud.
3. Keep a week long journal with drawings, showing cloud coverings at a certain time each day.
4. Create a story using clouds as a major factor in the story.
5. Create a story about living on an imaginery cloud.
6. Write letters to weather bureaus requesting information on clouds.
7. Use a cloud picture for a story starter.

C. Math

1. Identify the basic geometric shapes found in clouds.
2. Write and solve story problems about clouds.
3. Construct a bar graph and record the various types of clouds in the sky each day. Compute the frequency of each cloud after a predetermined length of time.
4. Estimate the distance clouds are from earth by making visual comparisons.
5. Review addition, subtaction, multiplication, and division facts on a "Cloud 9" bulletin board.

D. Science

1. Differentiate between types of clouds and the weather associated with each.
2. Invite a pilot to class and discuss how clouds affect flight schedules.
3. Using weather maps, trace cloud movement over U.S. for a period of one week.
4. Research and discuss cloud seeding.
5. Create a cloud in a jar.
6. Study severe cloud formations (i.e., tornadoes, hurricanes).
7. Study what causes clouds to move (winds).

Step IV. Core Activities: Clouds (Grade 4) continued

E. Social Studies

1. Learn cloud covering symbols.
2. Research work of Luke Howard, an English meteorologist in 1803.
3. Research folklore and legends associated with clouds.
4. Design a scene showing different types of clouds made out of cotton.
5. Graph number of hurricanes occuring each year off southern coast.
6. Design a map of Montana showing cloud cover using weather maps and forecasts.

F. Music

1. Have children write their own lyrics (using clouds as a theme) to a familiar tune.
2. Brainstorm title of songs that have "clouds" mentioned in the lyrics someplace (i.e., "Home on the Range").

G. Arts

1. Construct a cloud mobile displaying the various kinds of clouds.
2. Using water colors paint the various kinds of clouds.
3. Create a moody watercolor landscape picture using the colors clouds take on.
4. Create puppets for a particular cloud type and include a description for that cloud.

H. Health and Physical Education

1. Discuss how clouds affect our moods.
2. Imagine you live on a cloud and demonstrate how you would move around.
3. Play a new version of "Simon Says" using the cloud theme.

UNIT: WEATHER

Step IV. Core Activities: Weather Recording and Forecasting (Grade 5)

A. Reading

1. Develop a vocabulary of words used in weather recording.
2. Select, read, and discuss stories and articles relating to weather recording.
3. Listen to/read legends and myths about early weather forecasting (Indian folklore).
4. Visit the public library and research materials relating to weather recording (note taking).
5. Read materials on how weather forecasting has progressed in the last century.
6. Locate farmer's almanac and read how it forecasts the weather.
7. Perform a structural analysis of vocabulary words on weather recording (syllables, prefixes, base words).

B. Language Arts

1. Brainstorm weather forecasting methods.
2. Make a wordsearch/crossword puzzle, using weather recording vocabulary.
3. Prepare letters of inquiry requesting information on weather forecasting and mapping from a weather bureau.
4. Keep a daily journal of weather conditions for a period of time.
5. Design a fictitious weather map for an ideal vacation spot.
6. Given different weather pictures, have students write paragraphs about how they feel in different weather situations.
7. Write a story about Spearfish, South Dakota, the day the temperature rose 49 degrees in two minutes.

C. Math

1. Record weather statistics for a two week period.
2. Create word problems using addition and subtraction from weather map temperatures (i.e., high temp-low temp).
3. Create word problems using measurements from barometric reading (decimals) or amounts of precipitation (hundredths).
4. Create word problems using weather maps and scale distances (i.e., distances between high and low pressure area).
5. Compare different air pressures at different altitudes.
6. Compare decimal equivalents to fractions.

Step IV. Core Activities: Weather Recording and Forecasting (Grade 5) continued

D. Science

1. Design a simple barometer and measure air pressure for a time period.
2. Do temperature and barometric readings for a time period.
3. Study basic instruments of weather forecasting.
4. Visit the airport weather station to see how weather maps are obtained for flight information.
5. Invite a pilot to class to explain how weather forecasting affects flight schedules.
6. Research weather satellites now in use by U.S.
7. Design a wind vane.
8. Have students predict what weather will be like at noon on following day (cloud cover, wind speed, temp., weather type).

E. Social Studies

1. Construct a weather map of Montana and fill in weather symbols for one day.
2. Collect weather maps for one week and compare data; graph.
3. Using a weather map, discuss suitable locations for vacations, crop planting, flight travel, etc.
4. Using a weather map, attempt to predict what the weather will be like by studying fronts, high/low pressure areas, past patterns, etc.

F. Art

1. Design wind sock.
2. Design and make a kite.
3. Create a fictitious weather map with new symbols.
4. Design pictures or murals showing same scene (background), but with different weather conditions (i.e., sunny, rainy, snow, wind, sleet).
5. Design wind chime.

G. Music

1. Design musical instruments related to the wind (i.e., wind chime).
2. Listen to music about the weather. Students can brainstorm titles (i.e., "Home on the Range").

H. Health and Physical Education

1. Research means by which people in the past sought to predict weather conditions - "body signals".
2. Run into wind; run with wind.
3. Kite flying.
4. Jog in different weather conditions to determine effect on difficulty.

UNIT: WEATHER

Step IV. Core Activities: Water (Grade 6)

A. & B. Reading and Language Arts

1. Read textbook information about the water cycle and how it is affected by weather.
2. Brainstorm lists of water words; classify as nouns, verbs, etc. Make synonyms, antonyms, and homonyms lists.
3. Read about water problems and discuss.
4. Write a story in the 1st person as a drop of water.
5. Study poetry types and write poems with water theme.
6. Prepare and give a demonstration speech in which water is the main ingredient or necessary element.
7. Understand use of apostrophe in possessives.
8. Write fact and opinion statements about water.
9. Write perceptions of the effects of water color, temperature and precipitation type on mood, activity, etc., of humans.
10. Make a tape of water sounds.
11. Write stories and read them to younger children.

C. Mathematics

1. Write word problems using multiplication and division with 3 digits; exchange; solve; then student checks with calculator.
2. Write problems with incomplete data.
3. Write problems with inconsistent units of measure (conversion is necessary).
4. Sink/Float activity - calculate displacement.
5. Record precipitation and make bar graphs.
6. Use newspaper reports (or almanac) of river levels and create line graphs.
7. Compare highs and lows and cubic feet per second (CFS) of local rivers.
8. Study tides, highs, lows and time element.
9. Read precipitation records and estimate amount of precipitation for the next month (will need to follow, record, etc.).
10. Estimate amounts of water (guess, pour, measure, record. Evaluation is quiz on estimating, then measure and record as separate portion).
11. Review place value concepts through 1 billion.

D. Science

1. Study elements of water (read about hydrogen and oxygen).
2. Observe effects of temperature on properties of water.
3. Study snow structure (crystal shape, layering, density, etc.).
4. Create a terrarium - observe water involvement.
5. Record effects of contamination and temperature change on brine shrimp eggs.
6. Understand involvement and effects of water in the process of erosion.

Step IV. Core Activities: Water (Grade 6)

E. Social Studies

1. Make information booklet to teach younger children about acid rain.
2. Create a poster explaining tsunamis and other weather disasters.
3. Research water use and abuse and ways to conserve, clean-up and prevent problems.
4. Write and deliver a speech to persuade people about a water issue.
5. Map population density, climatic regions, growing seasons and precipitation of regions of the world.

F. Art

1. Make a coloring book to teach younger children about water conservation, pollution, acid raid, etc.
2. Observe snow crystals with hand lenses and draw several examples. Discuss geometric shapes.
3. Paint a mural of examples of activities to pursue while various forms of precipitation fall.
4. Paint landscape scenes with water color or acrylic. Experiment with various proportions of water to pigment.
5. Make snow and ice sculptures.

G. Music

1. Record and listen to various water sounds, (bubbles in water, rain, snow, water lapping against shore, rapids, walking on snow, etc.).
2. Write and play a musical phrase using proper note value to depict a specific water (or precipitation) sound.
3. Locate pieces of music that could describe a form of water.

H. Health, Physical Education and Recreation

1. Study effects of water pollution on health.
2. Invite county health nurse to discuss amount and importance of water in our daily diet.
3. Research hypothermia, prevention and treatment.
4. List activities that depend on various forms of water, (i.e., ice, ice fishing, ice skating, etc.). Choose one and teach others, "how to."
5. Take a walk or jog in the rain; in the snow. Summarize feelings, changes, etc.

UNIT: WEATHER

Step IV. Core Activities: Climates and Global Effects (Grade 7)

A. & B. Reading and Language Arts

1. Read and discuss newspaper and magazine articles about the effects of climatic changes on people, (i.e., drought in Africa).
2. Read about the different climate regions of the world. Use outline, summary, and note taking to organize information.
3. Study literary forms, (i.e., autobiography, biography, poetry, drama, essay, etc.). Choose one form to write using climate as a major influence or the main theme.
4. Write analogous phrases.
5. Read about climate in atlases.
6. Orally present information regarding one climate region.
7. Group pantomimes depicting inhabitants of various climate regions. Audience guesses which region.
8. Write opinion essay on how climate affects personality growth of people.
9. Brainstorm word lists for charts of each climate region of the world.
10. Write haiku.
11. Write letters to people in another climate regions.

C. Mathematics

1. Use precipitation and growing season maps. Convert numerical information to Roman Numerals.
2. Make line graph of hours of daylight, (use newspaper: sunrise/sunset).
3. Figure percentage of global land area in each climate region.
4. Write each climate regions area in scientific notation.
5. Write ratios of precipitation in each climate region, (i.e., relationship to fractions stressed).
6. Determine mean temperatures for specific months and/or seasons.
7. Study angles.
8. Practice relevant number operations (addition, subtraction, multiplication, division) using whole or fractional numbers.

D. Science

1. Study interrelationships of humans, animals and climatic environments.
2. Research endangered animals from each climatic region.
3. Make vegetation maps for each climatic region.
4. Choose one climate region and do in depth study of plant life.
5. Artifically change the climate of a plant. Hypothesize, observe, and record results.
6. Identify, describe and explain why storm types common to each climatic region.
7. Explore career options in the "climates" field.
8. Investigate land management (mining, farming, forestry, industry, recreations, and other uses).
9. Predict climatic changes and effects on lifestyles).
10. Study problems in specific climate regions that are a result of the climate; e.g., mildew in Oregon - marine climate.

Step IV. Core Activities: Climates and Global Effects (Grade 7)

E. Social Studies

1. Make growing season maps. Make precipitation maps.
2. Identify and describe each climate region in terms of its location (i.e., continent, near which oceans and seas).
3. Identify effects of climate on lifestyles (i.e., clothing, diet, recreation, occupations, transportation).
4. Compare and contrast two diverse climate regions in terms of lifestyle (See #3).
5. Develop your own country using a specific climate reion as initial consideration.
6. Create a travel brochure advertising a specific climate region.

F. Art

1. Make a collage depicting several climate regions.
2. Draw a political cartoon.
3. Brainstorm climate words. Choose words to present in abstract art form (i.e., painting, pastels, etc.).
4. Spatter paint using silkscreen technique.
5. Make kites.
6. Develop an art form that would endure changes in climate.

G. Music

1. Listen to music from different regions.
2. Make a tape of sounds to represent moods.
3. Write lyrics and melody about a climate region.

H. Health, Physical Education and Recreation

1. Investigate and participate in recreation opportunities of various climate regions.
2. Adapt an activity to another climate (i.e., adapt skiing so it can be done in the tropics).
3. Study diseases specific to climate regions.
4. Investigate preparation techniques for climate related disasters.
5. Make dances to bring an certain weather (i.e., rain, snow, sun, etc., dances).

UNIT: WEATHER

Step IV. Core Activities: Occupations (Grade 8)

A. & B. Reading and Language Arts

1. Read about weather and the elements of weather in textbooks.
2. Read weather reports of different areas.
3. View weather reports and forecasts on television.
4. Write a weather report.
5. Present an oral weather report.
6. Listen to a panel discussion.
7. Demonstrate note taking skill.
8. Generate a vocabulary list.
9. Listen to a guest speaker.
10. Prepare questions and interview people representing various occupations.
11. List occupations affected by weather and how.
12. Write limericks.
13. View a film on meteorology.

C. Mathematics

1. Develop story problems related to weather - 2 step.
2. Graph temperatures.
3. Graph mean, median and mode temperatures for a specific region and/or time period.
4. Study and compute with integers related to temperature.
5. Invite meteorologist to talk with class.
6. Compute averages.
7. Use calculators to compute.
8. Construct ratios and equal rations.

D. Science

1. Set up a weather station.
2. Forecast the weather.
3. Interpret coded information found on weather station models.
4. Read and interpret data on a bar graph chart.
5. Construct weather measuring instruments.
6. Understand storm systems.
7. Label and study various kinds of clouds.

E. Social Studies

1. Map hypothetical weather systems.
2. Interview people representing various occupations.
3. Research weather patterns in a specific area.
4. Predict consequences of weather.
5. Interpret weather data.

UNIT: WEATHER

Step IV. Core Activities: Occupations (Grade 8) continued

F. Art

1. Photograph weather patterns.
2. Create illustration of a storm.
3. Develop, in abstract art form, a painting of man and weather.
4. Illustrate a children's book on a meteorologist

G. Music

1. Create lyrics to a familiar melody.
2. Describe weather systems using sounds.

H. Health and Physical Education

1. Adapt games/sports due to weather interference.
2. Recognize safety measures used during a major storm.
3. Develop games for small children using weather elements as a theme.

UNIT: WEATHER

Step V. Lesson Plans

Sub-Unit: Seasons - Grades K-1

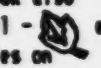
READING AND LANGUAGE ARTS: Seasons - Grades K-1
ASSIGN. SCOPE OF LESSON STATEMENT Increase students' word recognition through study of vocabulary lists.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Read stories to children.	1.1 Teacher reads appropriate stories to class. 1.2 Children who are able to read can read to class.		
2. Teacher develops a vocabulary chart.	2.1 Teacher writes new words encountered, on chart. Discuss words with class.	2.1 Chart, paper, pens.	2.1 Use for duration of unit.
3. Decode words from vocabulary list.	3.1 Start by looking at beginning and ending letters of word. Discuss the sounds these letters make. Teacher reads a sentence using that word but omits the word when telling children. Children decode word. Children give another sentence using that word.	3.1 Vocabulary list from chart.	

READING AND LANGUAGE ARTS: Seasons - Grades K-1
ASSIGN. SCOPE OF LESSON STATEMENT Provide opportunities for creative writing.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Create a language experience story.	1.1 Teacher leads a discussion on seasons which would include activities, weather changes, sights and sounds appropriate to the particular season. Select their favorite and circle.	1.1 Chart paper, pens.	
	1.2 Record on chart.	1.2 Winter | Spring Summer | Fall	
	1.3 Begin a discussion with a balloon and discuss what it does. Ask children what happens when its released. What if it floated around for a year? What would it see or do?	1.3 Helium balloon or paper shape balloons or packet of balloons.	
	1.4 Teacher begins story by saying: "One day a very special balloon named _____was lost by his friend _____at the fair..."	1.4 Chart.	1.4 "One day a very special balloon named _____was lost by his friend _____at the fair."
	1.5 Children take over from there. Each child contributes a line to the story while teacher writes it on chart and writes child's name who wrote it.		1.5 Example: Bobby - he cried and started to run after it because it was starting to rain.
	1.6 Help guide story onto seasonal ideas if it gets off track.		
	1.7 Form a book of the story for each child.		
	1.8 Let them make pictures for story.		
	1.9 Children read story to others.		
	1.10 Teacher can teach formal reading lesson from book.		

READING AND LANGUAGE ARTS: Seasons - Grades K-1
ASSIGN. SCOPE OF LESSON STATEMENT Provide opportunities for creative writing (continued).

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
2. Write creative story or poem.	2.1 Teacher sets up a large covered or painted cardboard box on writing table.	2.1 Cardboard box.	
	2.2 Children decorate each side of box one side for each season. They can put up magazine pictures or items from home.		
	2.3 Kids choose a season to write about.		
	2.4 With each group create a word bank and put an object on box or on chart paper.		2.4 A word bank for each side will probably be necessary.
	2.5 They may sit at table in front of chosen season to write.		
	2.6 Poems and stories (after teacher editing) can be made into a book.		
	2.7 Ditto a copy for each child.		2.7 Can make a shape book also spring - fall -  etc. Put dittos of stories on precut shape pages.
	2.8 Children read poems or stories to class.		

READING AND LANGUAGE ARTS: Seasons - Grades K-1
ASSIGN. SCOPE OF LESSON STATEMENT Provide sequencing activities.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Spell words taken off of vocabulary chart.	1.1 Teacher chooses words from vocabulary chart to use as spelling words for week.		1.1 For kindergarten children should recognize beginning and ending letters and make the sounds those letters make. Think of other words that start with those letters.
	1.2 Use various spelling activities to help children learn words.		
2. Practice sequencing activities.	2.1 Children retell language experience story in own words. Which happened 1st, 2nd, last and so on.		
	2.2 Children arrange pictures or language experience story in order of events.		
	2.3 Read story, "The Tale of Agnes Apple." Show pictures in correct order.	2.3 See, "The Tale of Agnes Apple," pp. 12, 13, 14, 15, in TRC file under WEATHER - SEASONS for additional sequencing practice.	
	2.4 Give each child a set of pictures to cut apart and mix up.	2.4 See appendix 3 for story and lesson sheets from GOOD APPLE BOOK.	2.4 Refer to Science - Seasons Grade K-1, p. 4, Objective 5.
	2.5 Teacher retells story and children put pictures in sequence. Color and glue to paper.	2.5 Paper.	
	2.6 Children retell story in own words.		

MATH: Seasons - Grades K-1
ASSIGN. SCOPE OF LESSON STATEMENT Use the calendar.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Use the calendar to find specific dates.	1.1 Introduce calendar by telling children why we have it. What it can do for us. Explain how it works. 1.2 Practice finding dates such as birthdays of children. 1.3 Each day let a child add a day to calendar and have him/her tell you what day it is. 1.4 Discuss the 4 seasons and where they fall on calendar. 1.5 Find each month with a season and talk about weather for each. 1.6 Learn the months in order.	1.1 Large calendar for each month. 1.6 Recite everyday when putting up new days.	1.1 A film at the Willson School media room called, "Using the Calendar."

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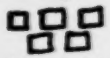
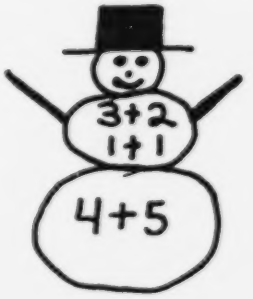
MATH: Seasons - Grades K-1
ASSIGN. SCOPE OF LESSON STATEMENT Provide experiences with sets.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Identify sets, numbers, numerals, 0-10.	1.1 Have children collect items from outside or magazine pictures of seasonal objects.	1.1 Collected objects.	
	1.2 Bring into classroom. Have children take turns counting objects in 1.1, p. 1. correspondence.		
	1.3 Find out how many there are and have child find the matching numeral to the set.	1.3 Premade numerals 1-10.	
	1.4 Have children identify other children's sets by counting and identifying correct numeral.		
	1.5 Children can sort all the objects into piles; i.e., all leaves in one pile, pine cones in another. Children should identify the set and the number in it by looking and not counting; i.e. "I see five boxes." 		1.5 Teacher lead discussion on why it was sorted that way.
	1.6 Teacher provides matching activities for kids. Match numerals to sets of objects.		

MATH: Seasons - Grades K-1
ASSIGN. SCOPE OF LESSON STATEMENT Provide practice with subtraction.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Add and subtract facts 0-15.	1.1 Using same objects as above children can add two sets together and find number symbol to match it. 1.2 Teacher introduces "+" sign and discusses meaning. Teacher instructs students to make a set of 5 and a set of 3 from objects. (Each set on a piece of paper). Now put 2 sets together (add) and count the number you now have. Put the number symbol with the set. 1.3 Show children the number sentence on the board 5 + 3 = 8. 1.4 Provide worksheets for extra practice. 1.5 Do the same as above for subtraction.	1.1 Number symbols 0-15. 1.4 Worksheets with number sentences geared at child's ability, + and -.	1.4 Worksheet example: 

MATH: Seasons - Grades K-1
ASSIGN. SCOPE OF LESSON STATEMENT Provide opportunity for children to create math problems.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Classify objects into catagories.	1.1 Have children bring in things from home pertaining to 4 seasons. (Clothes, activities, etc.). 1.2 Children sort these into 4 catagories and tell why they did it that way by placing them in the appropriately marked box.	1.1 Words: fall, winter, spring, summer. Boxes.	
2. Write number sentences for pictured and nonpictured story problems.	2.1 Teacher draws pictures on board such as a tree with 10 leaves on it then show 4 leaves falling o·· How many left. Children write 10-4=6. Provide worksheet for more practice. 2.2 Teacher tells children story and children make a number sentence.	2.1 Worksheets with picture story problems.	2.2 Let children tell story and have others solve. "My cat had 6 kittens but we had to give 3 away. How many do we have left?"

SCIENCE: Seasons - Grade K-1
ASSIGN. SCOPE OF LESSON STATEMENT Introduce the idea of seasons.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Identify and describe weather conditions typical of various seasons of the year.	1.1 Teacher starts with current seasons. Write the season on the board. WINTER - Children then give ideas on what happens in winter: snow, cold, skiing, Christmas, clothing worn, etc. 1.2 Identify winter season on a calendar. 1.3 Discuss advantages and disadvantages of season; i.e., no bugs, skiing, etc. 1.4 Do the same with each season at appropriate time in unit. 1.5 Children make mobile or collage of season to decorate room.	1.1 Chart paper, pen. View movies if appropriate. Willson Film Library - MP 483 SPRING IS HERE!, PERRIOT AND THE SUN, or PERRIOT AND RAIN AND SNOW. 1.5 Paper, magazines, strong, hangers or sticks, glue.	1.1 May want to put this on chart paper so it can be saved for future reference.

SCIENCE: Seasons - Grade K-1
ASSIGN. SCOPE OF LESSON STATEMENT Introduce the idea of "growing" seasons.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1.1 Discuss and explore growing seasons.	1.1 Lead a class discussion on what a growing season is. 1.2 Brainstorm and formulate a class definition of growing season. 1.3 Discussion: When is the growing season? What happens? Use calendar and chart it.		
2. Plant a garden.	2.1 Children plant their own garden with variety plants. 2.2 Children are responsible for their own plant. 2.3 Have children chart growth of plant each day.	2.1 Pots/containers, soil, seeds, storage space. View film: 0778 GARDENING: AN INTRODUCTION. (Willson Film Library).	2.1 Chart: Name: Type of plant: When planted: When it came up: When it was picked: Growth record each day/write dates.

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SCIENCE: Seasons - Grade K-1
ASSIGN. SCOPE OF LESSON STATEMENT Provide opportunity to apply experiences to create a project.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Create a "growing book."	1.1 Teacher leads discussion on plant observations. What makes plants grow? If someone's plant died, find reason. No water or sun? Explore all possibilities of plant growth encountered in class. 1.2 Children write their own "growing book." Illustrate book and make cover. Include care of plants. Can also include chart from Objective 2.1, p. 2.	1.1 View film: Willson School - MP 1071 WHAT PLANTS NEED FOR GROWTH.	1.1 Tied to language arts activity. 1.2 Example book: Plants need water dirt sunshine to grow.

SCIENCE: Seasons - Grade K-1
ASSIGN. SCOPE OF LESSON STATEMENT Practice using a calendar.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Plant a season tree.	1.1 Follow "Pick-a-Seed in Season" guide (in TRC file under Weather - Seasons").	1.1 Young scientists explore seasons Book 3, primary level. GOOD APPLE ACTIVITY BOOK Box 299 Carthage, IL 62321-0299	1.1 Book belongs to Amsterdam School.
2. Research wooly bear catapillers.	2.1 Follow wooly bear hunt in TRC file under Weather - Seasons.	2.1 Same as above.	2.1 This lesson can help develop the concept of seasons by watching stages of wooly worm.
3. Use a calendar to chart weather.	3.1 Give each child a copy of a calendar month. Explain that each day they are to record the weather in the proper slot. Draw a picture of it and give approximate temperature.	3.1 Photo copy or hand made calendar of 1 month at a time.	3.1

SCIENCE: Seasons - Grade K-1
ASSIGN. SCOPE OF LESSON STATEMENT Provide opportunity to use the 5 senses.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Recognize animal habits in each season.	1.1 Talk about animal habits. 1.2 Can also talk about animal coloring. Camouflage, rabbits, lizards, fox, etc. 1.3 Pictures of animals. Why do these animals change colors.		1.1 Winter - hibernation; Fall - collect food; Spring - animals born/hatched; Summer - grow and explore/learn.
2. Use senses to describe seasons.	2.1 Introduce 5 senses. Display pictures of senses: eyes, ears, nose, hands, mouth. 2.2 Practice using 1 sense at a time: a) close eyes - listen for environmental sounds; b) smell objects with eyes eyes closed - identify objects; c) tasting party - identify salt, sour, sweet, bitter, tastes. 2.3 Using senses, describe current season. Feel, cold, warm, wind, etc. Smell, hear, wind, rain. Chart on paper.	2.1 Pictures of examples of 5 senses.	

SOCIAL STUDIES: Seasons - Grade K-1
ASSIGN. SCOPE OF LESSON STATEMENT Practice using calendar.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Use calendar to find specific seasons.	1.1 The 4 seasons should already have been discussed. 1.2 Using a large calendar look at each month. Discuss what the weather is like in that month and what season it falls in. 1.3 Have 4 large pieces of paper labeled with each season. 1.4 Write down the months under each season.	1.3 Large sheets butcher paper.	

SOCIAL STUDIES: Seasons - Grade K-1
ASSIGN. SCOPE OF LESSON STATEMENT Identify various holidays.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Identify holidays in each season.	1.1 Should do Objective 1, pg. 1, first. Using large pieces of paper from previous lesson, identify various seasons; i.e., Halloween, Easter, Christmas, July 4, etc. 1.2 Put the holiday under the season. 1.3 Discuss activities related to that holiday. Easter - spring baby animals - chicks, ducks, lambs, etc. 1.4 Can do art activities related to holiday. Make lambs or chicks in eggs, etc.		1.4 Refer to Art section.

SOCIAL STUDIES: Seasons - Grade K-1
ASSIGN. SCOPE OF LESSON STATEMENT Identify clothing worn in specific seasons.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Match clothing to seasons.	1.1 Concept attainment game is one way to present. Have pictures of clothing for all seasons. Start with 1 idea (summer) show a picture of summer clothing and say this is + (positive) or my idea. Put it under a + sign. Show a picture of clothing for a different season and put it on - (negative) side. Continue in this manner until someone can guess your idea. "Things to wear in the summer." Put a sun over those pictures. Sort the rest of pictures according to season. Have pictures of snow, sun, rain, fall leaves, as catagories. 1.2 Lead discussion on why people wear the clothing they do in each season. 1.3 Children make paper dolls (teacher may need to make pattern). Make various types of clothing to fit. Teacher tells students which season they are in or describes season and children dress dolls appropriately.		

ART: Seasons - Grade K-1
ASSIGN. SCOPE OF LESSON STATEMENT Use various media to create seasonal projects.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Make cotton lamb.	1.1 Make lamb for 1st day of spring or March. 1.2 Children trace hand (fingers are legs). 1.3 Fill in with cotton.	1.2 Black paper.	1.1 MAILBOX MAGAZINE - March 85 a very good resource.
2. Make a seasonal collage.	2.1 Make a collage (group or individual) out of objects found in that season, leaves, dried weeds, flowers, seeds, etc.		
3. Finger paint to music.	3.1 Find seasonal music and discuss feelings or emotions we experience. 3.2 Fingerpaint to music keeping in mind colors of that season and music.		3.2 THE FOUR SEASONS, Vivaldi, George Winston - Piano music seasonal albums. Windham Hill label (Cactus Records).
4. Make and decorate kites.	4.1 Make kite shapes children cut it out. Decorate with melted crayon shavings or paint. Add a tail and hang from ceiling.		4.1 "The Kite," a pantomime about kites. March 1982, INSTRUCTOR (included in this unit).
5. Create snow sculptures (outside).	5.1 Pick an object to make. Build a big pile of snow and carve it. Spray with colored water (water bottles).		

HEALTH AND PHYSICAL EDUCATION: Seasons - Grade K-1
ASSIGN. SCOPE OF LESSON STATEMENT Provide opportunity for creative movement.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Move bodies to express feelings.	1.1 Teacher tells a story while children move to express events in story; i.e., "You are a tree in July. The sun is shining and a cool breeze is blowing your leaves, etc."		
2. Move in time to music.	2.1 Teacher chooses music which children can easily relate to seasons. Play parts of the music and instruct children to move freely around the room in a way that conveys tone or mood of music. Fade music out to end game.		2.1 Classical music may be conducive to this activity. Low notes with timpani drums sound signify storms. High notes may be spring.

UNIT: WEATHER

Step V. Lesson Plans

Sub-Unit: Effects of Weather on Us - Grade 2

READING: Effects of Weather on Us - Grade 2
ASSIGN. SCOPE OF LESSON STATEMENT Provide opportunities for applying various reading skills.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Read silently for comprehension; practice oral reading.	1.1 Students find nursery rhymes relating to weather in books teacher and students have brought in. 1.2 Read orally to class. 1.3 Discuss effects of weather on what's happening in each rhyme.	1.1 THE REAL MOTHER GOOSE, Rand McNally; other collections of nursery rhymes.	
2. Read and understand meanings of new vocabulary words.	2.1 List vocabulary words on large cloud or sun shaped paper on bulletin board as they are brought up in unit. 2.2 Discuss meanings.	2.1 Large weather shaped paper for bulletin board, marker.	
3. Practice alphabetizing and word division skills.	3.1 Review alphabetizing procedures. Students list vocabulary words on own paper in alphabetical order. 3.2 Review word division generalizations - syllables, compound words, prefixes and suffixes. Students write words on board and divide into syllables, etc.	3.1 Paper, pencil. 3.2 Blackboard, chalk.	
4. Remember sequence of events from poems read.	4.1 Have several weather poems displayed in room. 4.2 Teacher types poems and cuts them apart. 4.3 Students reconstruct poems in proper sequence.	4.1 Variety of weather poems displayed on bulletin boards. Several poems typed and cut apart. POETRY PLACE; ANTHOLOGY. Instructor books, EARLY LEARNING magazines.	4.1 Science-Math Resource Center: Collection of weather poems in file of "Weather, Effects of Weather on Us," Grade 2.

LANGUAGE ARTS: Effects of Weather on Us - Grade 2
ASSIGN. SCOPE OF LESSON STATEMENT Demonstrate listening and writing skills.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Construct questions, applying correct usage and punctuation.	1.1 Students find and cut out weather related pictures in old magazines. 1.2 Glue these to top of a piece of construction paper. 1.3 Write 3 questions about the pictures on penmanship paper and glue this under the picture. 1.4 Students take turns asking classmates their questions.	1.1 Old magazines, 12" x 18" construction paper, penmanship paper.	
2. Develop listening skills by identifying incorrect words and sentences and practice writing sentences.	2.1 Teacher writes a number of nonsense sentences on index cards: a) In July, we'll build a snowman; b) Susan wore her boots and mittens on a picnic; c) Birds fly north for the winter. Ask children to identify the incorrect words and tell why the sentences are nonsensical, then replaces incorrect word with a word that will make the sentence correct. 2.2 Children then write their own nonsense sentences and share with class.	2.1 Index cards with nonsense sentences written on them.	

LANGUAGE ARTS: Effects of Weather on Us - Grade 2
ASSIGN. SCOPE OF LESSON STATEMENT Demonstrate listening and writing skills (continued).

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
3. Use spelling, penmanship, correct usage, punctuation, capitalization and letter writing skills.	3.1 Teach the 5 parts of a letter and how to write addresses. 3.2 Students write letters to children living in another area of the country where the climate differs from ours, inquiring about their weather, sports, leisure activities, dress, etc.	3.1 English textbook, name of a school in another area of U.S.; i.e., Florida.	3.1 Teacher should write to a 2nd grade teacher first to tell of your project and its purpose and get names of students in the class to write to.
4. Write simple similies.	4.1 Cut a snowman shape from large, white butcher paper. Put up on bulletin board. Children can add a hat, face, scarf, etc. On top write, "...As Cold As..." Children finish by writing on snowman with pencil hung next to snowman.	4.1 White butcher paper, pencil attached to string and tacked to bulletin board.	

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MATH: Effects of Weather on Us - Grade 2
ASSIGN. SCOPE OF LESSON STATEMENT Apply math skills of computation, telling time, graphing and measuring.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Estimate time, practice subtraction computation, practice telling time.	1.1 Discuss with class effects of air temp. on ice and snow. Have students each estimate how long it will take a snowball (or ice cube) to melt in the room. 1.2 Write each estimate on board. 1.3 Let a snowball sit in the room and record melting time. 1.4 Compare actual time with estimates. 1.5 Have students compute the difference in their estimate and the actual time. 1.6 Find who was closest and who was furthest off, etc. Students fill out sheet prepared ahead by teacher.	1.1 Blackboard, chalk, ice cube. 1.1 Blackboard, chalk, ice cube or snowball. Sheets for recording students estimates, starting and finishing times, computation difference, etc.	
2. Read and record temperatures, practice telling time, construct bar graphs.	2.1 Introduce some ways of measuring temp. by bringing in a variety of thermometers: meat, candy, acquarium, room, etc. 2.2 Explain each and point out differences in temp. scales. 2.3 Show how a thermometer works by placing candy thermometer in very hot water and then in very cold. 2.4 Set up a room thermometer outside near classroom. 2.5 Assign students to read and record temps. on both at different times during the day for a week. 2.6 Make a bar graph on chart paper comparing the temps. outside and inside. Students then make own bar graphs on smaller graph paper.	2.1 Variety of thermometers, cold water, hot water, chart paper, graph paper, markers. 2.3 Pan of boiling water, pan ice water.	

MATH: Effects of Weather on Us - Grade 2
ASSIGN. SCOPE OF LESSON STATEMENT Apply math skills of computation, telling time, graphing and measuring (continued).

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
3. Practice measuring with rulers, construct bar graphs.	3.1 Review procedure for measuring inches with 12" rulers. 3.2 Students each measure one of their mittens. 3.3 Record all measurements on chart or board. 3.4 Students then graph the findings on paper.	3.1 Rulers, chart paper, paper for graphs.	
4. Write and work story problems using money.	4.1 Discuss clothing and sports equipment needed for each season of year. 4.2 Students look up costs of these in catalogs or newspaper ads. 4.3 Display pictures and prices of various items on bulletin board. 4.4 Students write story problems and then work each other's. 4.5 Put problem on cards in "Story Problem File."	4.1 Newspapers, clothing and sport equipment catalogs.	

SCIENCE: Effects of Weather on Us - Grade 2
ASSIGN. SCOPE OF LESSON STATEMENT Become aware of various weather conditions for the seasons of the year.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Identify and describe weather conditions typical of various seasons of the year in our area.	1.1 Divide class into 4 groups and assign a season to each group. 1.2 Each group will color a picture depicting weather in their season then report to class - describing weather of that season. 1.3 Put these up on bulletin board. 1.4 Students label and list weather conditions of each. Discuss effects weather in various seasons on plants, animals, and birds. 1.5 Introduce migration, hibernation, etc. 1.6 Add these to mural on bulletin board as discussed.	1.1 Books, poems on the seasons and weather.	1.1 See file - collection of poems and list of books at Teachers' Resource Center - "Weather, Effects on Us," Grade 2.

SCIENCE: Effects of Weather on Us - Grade 2
ASSIGN. SCOPE OF LESSON STATEMENT Understand the use of simple weather instruments.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Use thermometers to measure temperature, practice recording temperatures.	1.1 Review various thermometers and their purposes and how to read. 1.2 Students record temperature of various things in room: jar of snow, boiling water, warm water, cup of coffee, aquarium, glass of milk, drinking fountain water, etc.	1.1 Thermometers, items to measure snow, boiling water, warm water, hot coffee, milk, etc.	
2. Construct a simple weather instrument and observe it in operation.	2.1 Discuss purpose of weather vanes. If possible, have one to show students or show pictures.	2.1 Coat hangers, heavy aluminum foil, pint margarine tubs with lids, sand.	2.1 Directions for making a weather vane: "Instructor" Nov/Dec, 1984, p. 58," Dec. "activities and answers," Dec. 5." See Teachers' Resource Center file for "Weather, Effects on Us," Grade 2.

SCIENCE: Effects of Weather on Us - Grade 2
ASSIGN. SCOPE OF LESSON STATEMENT Demonstrate an understanding of the water cycle.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Identify and describe the water cycle.	1.1 Introduce by stressing our dependence on water for life. 1.2 Have pictures available showing many uses of water. 1.3 Put on bulletin board as discussed. 1.4 Have students get a glass of water and as they drink ask questions like, "How does it taste?, How does it look?, Is it clean?" Then ask, "How old do you think water is?" 1.5 Tell them their grandfathers might have drunk some of the very same water when they were children. Tell them the water they drink is millions of years old and all the water on earth is used water and there will never be any new water, so we must use it over and over.	1.1 Pictures showing the many uses of water.	1.1 Lesson taken from "Lollipops, Ladybugs and Lucky Stars," January. See "Weather - Effects on Us, Grade 2. Poster "All About Weather," supplement to "Weekly Reader," 1983. Depicts life of a raindrop in the water cycle. May borrow from Amsterdam School.

SCIENCE: Effects of Weather on Us - Grade 2
ASSIGN. SCOPE OF LESSON STATEMENT Demonstrate an understanding of the water cycle (continued).

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
2. Identify and understand water cycle.	2.1 Define "cycle." Use example of bicycle, tricycle, etc. to show that wheels go round and round - no starting and ending point. A cycle is like a wheel. Point out that the seasons are a cycle and so is water.		
	2.2 Divide class into 4 groups. Each group colors a section of a mural that will show the water cycle: 1) sun, wind, cloud; 2) cloud with rain; 3) land with trees and river; 4) lake, animal drinking. As putting these up in order, explain what happens in each phase of the water cycle - the water goes round and round from rain to earth to the air, to the clouds, etc., just like a wheel. Label mural.	2.2 Paper for mural.	
	2.3 Optional additional activity: WATER CYCLE PUPPETS Fold paper plates in half and cut a hole in center about 2" below fold for fingers. Each child decorates a phase of the cycle like a sun, rain, lake, river, cloud, wind then students role play water cycle to determine how well they understand water cycle.	2.3 Plain white paper plates, paint, cotton, fabric scrap, yarn, construction paper, tinsel.	2.3 Taken from "Lollipops, Ladybugs and Lucky Stars." January/February 1985, pp. 12-14. See Teachers' Resource file, "Weather, Effects on Us - Grade 2.

SCIENCE: Effects of Weather on Us - Grade 2
ASSIGN. SCOPE OF LESSON STATEMENT Demonstrate an understanding of the water cycle (continued).

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
3. Identify and see the water cycle.	3.1 Optional additional activity. BUILD CLASSROOM WATER CYCLE: In an aquarium, put a 1" layer of gravel, 2nd layer of sphagnum or peat moss and 3rd layer of soil. 3.2 Collect and plant woodland plants like violets, ferns or mosses. Water lightly and cover. 3.3 Plants will take up the moisture from the soil and release it through their leaves. 3.4 Water molecules will condense on the glass and "rain," back to the soil. 3.5 This works in miniature the same way the water cycle works for Earth. 3.6 Students can make individual water cycles by following same procedure and using a wide-mouthed jar and a piece of plastic wrap with a rubber band for a lid.	3.1 Aquarium or same glass container, gravel, peat moss, soil, woodland plants.	3.1 Taken from "National Wildlife Week," Teacher's Guide, March 18-24, 1984, p. 7. See Teachers' Resource "Weather, Effects on Us," Grade 2.

SOCIAL STUDIES: Effects of Weather on Us - Grade 2
ASSIGN. SCOPE OF LESSON STATEMENT Understand how weather affects people's lifestyle.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Tell how weather affects people's jobs.	1.1 Invite resource people in to tell how the weather affects their job; i.e., farmer, pilot, etc. 1.2 Summarize what resource person said - teacher list main ideas on chart.	1.1 Farmers. See an Agricultural Representative at a local bank. Pilots - Mrs. Lynn Kitto Eagle Flight, 388-6111.	
2. Recognize there are differences in climates in the world and how they affect clothing, recreation, travel, etc.	2.1 Introduce concept of different climates in world by using globe point out equator, poles, etc.; and in U.S. by using a map. Divide class into 4 or 5 groups. Each group chooses a season and destination and takes an imaginary trip. They report to class what kinds of clothing they would take, how they would travel, what they will do there, types of recreation, etc.	2.1 Globe and map.	
3. Recognize how weather affects types of homes people live in, practice using globe.	3.1 Discuss various types of shelter. Collect and label pictures of different types of shelters found in world. Locate on globe where each type could be found.	3.1 Magazines such as NATIONAL GEOGRAPHIC that can be cut up, globe, bulletin board.	

ART: Effects of Weather on Us - Grade 2
ASSIGN. SCOPE OF LESSON STATEMENT Develop creativity through artistic expression.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Use two painting techniques to express how a tree changes with the seasons.	1.1 Review with class the effects of weather on trees and plants. Divide large sheets of construction paper into fourths. Students label each section with the name of a season. In each section students paint a tree trunk and branches with a brush and tempera paint. After this dries, dip a small piece of sponge in tempera paint (tap it on the edge of container to remove excess paint) then dab the sponge onto the tree branches to make leaves, showing how a tree looks in each season of the year. Sponge printing creates an excellent foliage texture.	1.1 Large sheets construction paper, tempera paint (brown, green, yellow, gold, red, orange), paint brushes, sponge cut in approximately 1"x1" pieces.	
2. Create snowflakes from variety of materials.	2.1 Discuss what snowflakes are, pointing out that they are 6-sided and everyone is different. Students each make one out of white paper, laminate and hang from ceiling. Then let children experiment making snowflakes with variety of materials - pipe cleaners, tissue paper, colored magazine pages.	2.1 Plain white paper, tissue paper, magazines, pipe cleaners.	2.1 CREATE, A Handbook for Teachers of Primary Art, Platts, Mary E., . 45.

ART: Effects of Weather on Us - Grade 2
ASSIGN. SCOPE OF LESSON STATEMENT Develop creativity through artistic expression (continued).

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
3. Take advantage of cold weather by creating ice mobiles.	3.1 Give each child a small aluminum pie pan. Fill with an inch of water then freeze. Cut out or color own pictures of cold-weather animals or scenes and dampen with water. Stick one or two in the center of each ice block. Add another inch of water and freeze. Remove the block from the pan and poke a hole in the top with a warm nail and insert string. Hang mobiles out side windows.	3.1 Small aluminum pie plates, nail, magazines, paper, water, string.	3.1 "Make An Ice Mobile," INSTRUCTOR, Javernick, Ellen, February 1985, p. 124.

MUSIC: Effects of Weather on Us - Grade 2
ASSIGN. SCOPE OF LESSON STATEMENT Appreciate singing and creative movement experiences.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Sing for fun, identify note movement, use rhythm band instruments, participate in creative movement.	1.1 Learn song, "One Little Raindrop." Discuss song, noting which lines are same, different, melody movement, etc. Follow melody with hands. Take turns being raindrops and swishing colored scarves to the feel of the music. Discuss and choose appropriate rhythm instruments to play.	1.1 Large colored scarves, rhythm instruments like triangles, finger symbols.	1.1 Words, music and detailed lesson plan. "Notes from Kathy," by Kathy Lecinski, in Teachers' Resource Center, "Weather - Effects on Us," Grade 2.
2. Sing and act out various types of exercise.	2.1 Play singing game, "Exercise in Spring." Each verse tells what to do as song is sung. Students can take turns being leader.		2.1 Words and music, "Exercise in Spring," by Katrine Wagner in Teachers' Resource Center, "Weather - Effects on Us," Grade 2.
3. Make up lyrics to a familiar tune.	3.1 Sing familiar simple song then make up own lyrics and sing.	3.1 SINGING WITH CHILDREN, Nye, Aubin and Kyme, Wadsworth Publishing Company, Inc. THE ALL-YEAR-LONG SONGBOOK, compiled by Roslyn Rubin and Judy Mathen, Scholastic Book Services.	

HEALTH, PHYSICAL EDUCATION AND RECREATION: Effects of Weather on Us - Grade 2
ASSIGN. SCOPE OF LESSON STATEMENT Demonstrate creativity in movement activities.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Use body movement in dramatizing poetry.	1.1 Learn poem "A Tall Stalk of Corn." Move whole body doing what poem says.	1.1 Use any poem that suggests body movement. POETRY PLACE; ANTHOLOGY; Instructor Books.	1.1 A TALL STALK OF CORN I'm a tall stalk of corn, The wind blows me. My head nods to the left, My head nods to the right, My body blows to the left, My body blows to the right. The wind blows me. Now the wind is getting quiet. Now the wind has gone. Now my body is quiet.
2. Participate in basic movement activities individually and as part of a group working together.	2.1 Have a "Winter Olympics," with individual and/or group events; i.e., a) who can make the biggest snowball in a ten minute time period; b) who can slide the farthest; c) who can build the best snowman; d) who can create the prettiest ice sculpture; e) who can throw a snowball the farthest; f) who can build the highest wall of snow and jump over it. g) who can ski race the fastest without lifting a foot; h) team relays of finding matching mittens or boots, or unwrapping a piece of gum with a pair of mittens on, etc.		
3. Identify appropriate recreational activities for each season of the year in Montana.	3.1 Set a box in room and label each side with a season. Cut pictures from a magazine or catalog that show recreational activities and put on	3.1 Large cardboard box, old magazines and catalogs.	

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UNIT: WEATHER

Step V. Lesson Plans

Sub-Unit: Precipitation - Grade 3

READING/LANGUAGE ARTS: Precipitation - Grade 3
ASSIGN. SCOPE OF LESSON STATEMENT Become acquainted with the word "precipitation."

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Demonstrate how to pronounce the word "precipitation," its meaning, and word origin.	1.1 Analyze the word "precipitation" using structural analysis. 1.2 Locate the word "precipitation" in the dictionary. 1.3 Explain its meaning and demonstrate how to pronounce the word using the pronunciation guide.	1.1 Dictionary for each student.	

READING/LANGUAGE ARTS: Precipitation - Grade 3
ASSIGN. SCOPE OF LESSON STATEMENT Become acquainted with books written about precipitation.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Summarize one story about precipitation and tell why it is considered factual, fictional, or true to life literature.	1.1 Read at least four books about precipitation. 1.2 Write a book report about favorite book. 1.3 Share book reports and discuss how we distinguish between factual and fictional books about precipitation. Include "true to life" books.	1.1 School library, public library, literature from weather bureau.	1.1 MONTANA WEATHER, Montana Magazine, THE QUESTION AND ANSWER BOOK - WORLD OF WEATHER, Adler, David, Troll Associates. YOUNG SCIENTISTS EXPLORE THE WEATHER, Good Apple, DeBruin, Jerry. SNOW FLAKE, Balico, Paul. SNOWMAN, Montgomery, Rutheford. SNOWSTORM, Chory, Selina. THE SNOWY DAY, Keats, Eyra Jack. SNOW TREASURE, McSwigan, Marie. SNOWBOUND MYSTERY, Warner, Gertrude, Chandler.

READING/LANGUAGE ARTS: Precipitation - Grade 3
ASSIGN. SCOPE OF LESSON STATEMENT Gain an understanding os specialized words related to precipitation.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Students will spell and understand vocabulary words dealing with precipitation.	1.1 Alphabetize a precipitation vocabulary list; locate them in a dictionary; and write their definitions.	1.1 List of vocabulary words dealing with precipitation.	1.1 Vocabulary List: rectangle, square, circle, hail, precipitation, sleet, measure, gauge, instrument, weather, inches, funnel, milliliter (millilitre), increments, diameter, ratio, radius, hexagon, pentagon, estimate, vapor, cold, evaporation, moisture, river, rain, snow.
	1.2 Students make a word search for the vocabulary list.		
	1.3 Students play a swim spell down game using words from the vocabulary list.	1.3 Blackboard.	
	1.4 Students write sentences using the vocabulary words.	1.4 Writing paper.	
	1.5 Students listen to a taped recording of selected sentences they wrote in activity 1.4, and write the sentences using good handwriting, correct punctuation, and spelling.	1.5 Tape recorder, tape.	
	1.6 Take a spelling test which is the precipitation vocabulary list.	1.6 Writing paper.	

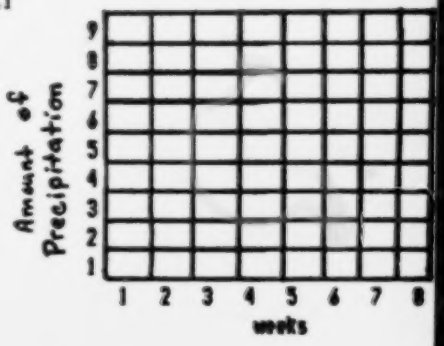
READING/LANGUAGE ARTS: Precipitation - Grade 3
ASSIGN. SCOPE OF LESSON STATEMENT Create an understanding of the process of writing poetry.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Read orally a poem about precipitation and identify the poetic writing style.	1.1 Read poetry selections about precipitation. 1.2 Make a distinction between the various styles of poetry read.	1.1 A selection of poetry about precipitation.	1.1 THE SNOWMAN, Erskine, Jim. SNOW IS FALLING, Branley, Franklin M. A WALK IN THE SNOW, Busch, Phyllis S. SNOW BUNNY, Katz, Bobbi. THE SNOW QUEEN, Andersen, Hans Christian. SNOW SLOPES, Thompson, Mary Wolfe. SNOW SURVEYS, Colby, C.B. SNOW TRACKS, George, Jean. RAIN, Kalan, Robert. CLOUDS & RAIN & RAINFALL, Ariane. RAIN AND SHINE, Witty, Paul. RAIN CLOUD, THE WILD MUSTANG, Kraeazel, Margaret. RAIN DROP SPLASH, Tresselt, Alvin. THE RAIN FOREST, Sperry, Armstrong. RAIN, RAIN DON'T GO AWAY, Morgan, Shirley.
2. Write a comical rhyming poem about precipitation.	2.1 Make several lists of rhyming words about precipitation. 2.2 Write and illustrate a comical rhyming poem about precipitation. 2.3 Write final copy on a rain drop and cover with Syran Wrap.	2.1 Blackboard. 2.2 Writing and construction paper.	

READING/LANGUAGE ARTS: Precipitation - Grade 3
ASSIGN. SCOPE OF LESSON STATEMENT Compare the weather patterns with mood changes.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Demonstrate the relationship (or lack of relationship) weather has on one's moods.	1.1 Keep a daily journal that includes information on the day's precipitation and how your day went. 1.2 After one month of journal keeping review what has been written and transfer data to graph from (bargraph) and attempt to draw some conclusions about the relationship between weather and moods.	1.1 "Teacher Made" Journal.	1.1 RAINBOW IN THE SKY, Sharp, Adda Mai. A RAINBOW OF MY OWN, Freeman, Don. RAINBOWS AND JELLY BEANS, Xerians. SNOWFLAKE, Balico, Paul.

MATHEMATICS: Precipitation - Grade 3
ASSIGN. SCOPE OF LESSON STATEMENT Create an understanding of the mathematic skills used in measuring precipitation.

OBJECTIVE		ACTIVITIES		RESOURCE MATERIALS		EXPERIENCE CHART
1. Will measure and record precipitation using both the standard and metric systems.	1.1	Keep a daily record of precipitation using both the standard and metric measuring systems.	1.1	Student made rain gauge following directions on p. 28 "How to Make a Rain Gauge" in WEATHER, ELECTRICITY & ENVIRONMENTAL INVESTIGATIONS, (Monforton). Teacher made form for precipitation record.	1.1	Week beginning March 4 Week ending March 8 Monday _____ Tuesday _____ Wednesday _____ Thursday _____ Friday _____ Total____
2. Display skills of adding 5 numbers with decimal points.	2.1	Add up the weekly precipitation which will involve skills of adding five numbers with decimal points.	2.1	Paper.		
3. Construct a bar graph to show weekly precipitation.	3.1	Record weekly precipitation on a bar graph.	3.1	Teacher made bar graph skeleton.	3.1	

Make another form using .10 of an inch.

Metric measurement can also be used, (cm).

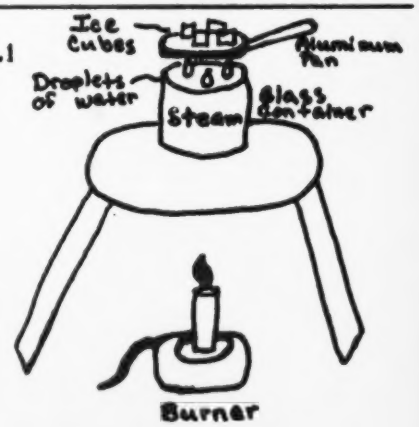
MATHEMATICS: Precipitation - Grade 3
ASSIGN. SCOPE OF LESSON STATEMENT Create an understanding of the mathematic skills used in measuring precipitation (continued).

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
4. Demonstrate the skills needed to compare and compute differences of precipitation.	4.1 Compare and discuss the weekly precipitation totals. In doing so compute the weekly and monthly differences. 4.2 Compare and discuss the precipitation averages of other areas of the U.S.	4.1 Records taken on p. 1 Precipitation Grade 3. Paper. 4.2 Rainfall maps found in encyclopedias and also available from a weather station (airport).	
5. Write five story problems that all contain facts, questions, and key words. Problems will contain adequate information to solve.	5.1 Discuss what facts and questions are in math problems. 5.2 Practice locating the above in addition to key words in questions which indicate method of computation. 5.3 Write story problems involving precipitation. Exchange problems and locate the parts of a problem mentioned in 5.1 and solve the problems.	5.1 HOW TO SOLVE MATH PROBLEMS Workbook published by WEEKLY READER. 5.3 Paper, 4" x 5" cards.	

SCIENCE: Precipitation - Grade 3
ASSIGN. SCOPE OF LESSON STATEMENT Acquire an understanding of the different kinds of seasonal precipitation.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Compare the average precipitation for each season of the year in two very different states of the U.S.	1.1 Compare and discuss the amount and type of precipitation for each season of the year in Montana and in Connecticut.	1.1 Precipitation maps for Montana and Connecticut for all four seasons.	
2. Show an understanding of the water content of the various kinds of precipitation with an emphasis on controlled variables.	2.1 When the opportunity arises collect the various kinds of precipitation (snow, hail, sleet) and measure for water content by measuring before and after melting takes place.	2.1 Student made container for measuring precipitation before and after it melts.	

SCIENCE: Precipitation - Grade 3
ASSIGN. SCOPE OF LESSON STATEMENT Create an understanding of how precipitation is formed and what happens to it.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Summarize in written form how precipitation forms and what happens to it.	1.1 Perform an experiment which illustrates how precipitation forms. Refer to experience chart for more details.	1.1 Items in Diagram 1.1 in Experience Chart.	1.1 
	1.2 Discuss the results of the experiment above and relate it to real life.		
	1.3 Read and discuss what happens to precipitation with the aid of illustrations found in most 3rd grade science textbooks.	1.3 3rd Grade science text book.	1.3 ELEMENTARY SCIENCE LEARNING BY INVESTIGATING, Brewer, Garland, Edwards, Rand McNally, pp. 71-89.

SCIENCE: Precipitation - Grade 3
ASSIGN. SCOPE OF LESSON STATEMENT Gain an understanding of the impact of air pollution on our environment.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Show an understanding of acid rain and its effect on our environment.	1.1 Read several articles describing what it is and how it affects our environment.	1.1 Stock classroom with reading material dealing with acid rain.	1.1 Suggested reading: RAIN, RAIN GO AWAY - A COLORING BOOK ON ACID RAIN, Science Math Resource Center. "How Menancing is Acid Rain?" by Anne LaBastille, NATIONAL GEOGRAPHIC, November, 1981, p. 652. Filmstrip on acid rain in Science-Math Resource Center. ACID RAIN, Gay, Kathlyn (Good Teacher Resource). RAIN SHADOW, Newton, James R.

SOCIAL STUDIES: Precipitation - Grade 3
ASSIGN. SCOPE OF LESSON STATEMENT Become aware of how precipitation affects our lives.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Identify occupations, recreations, and customs that are dependent upon precipitation.	1.1 Brainstorm a list of occupations, recreations, and customs that are dependent upon precipitation. List the suggestions on blackboard in separate columns. Students will copy the list from the board. 1.2 Choose a few of the suggestions from the board and discuss the effects lack of precipitation might have on the occupation (recreation or custom).	1.1 Blackboard, paper, pencil.	
2. Describe how different food sources depend upon precipitation.	2.1 Develop a food chain on blackboard and then discuss what happens if the rainfall is inadequate. 2.2 Discuss the current events that may pertain to the above topic. For example: starving countries, suffering from drought.	2.1 Blackboard. 2.2 Newspaper, magazines, T.V., KEEPING WARM, KEEPING COOL, Rahn, Joan Elma (How animals adapt to the weather).	
3. Describe how customs develop because of precipitation.	3.1 Read about and discuss the celebrations and customs that have developed around the monsoon in India. 3.2 Discuss how the custom developed. 3.3 Talk about customs that we have that are dependent on precipitation. 3.4 Create a custom for our area.	1.1 "Monsoons: Life Breath of Half the World," NATIONAL GEOGRAPHIC. Vol. 166, No. 6, Dec. 1984.	

SOCIAL STUDIES: Precipitation - Grade 3
ASSIGN. SCOPE OF LESSON STATEMENT Become aware of how precipitation affects our lives (continued).

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
4. Report how families and children live, work, and play in an area of extremely high precipitation or near lack of precipitation.	4.1 Share one description of how people live in an area of extremely high precipitation. 4.2 Students each read another account of a similar situation. 4.3 Write a report and share with class.	4.1 "Monsoons: Life Breath of Half the World," NATIONAL GEOGRAPHIC, Vol. 166, No. 6, Dec. 84. "Rain Forests: Nature's Dwindling Treasures and the Teaming Life of a Rain Forest," NATIONAL GEOGRAPHIC, Vol. 163, No. 1, Jan. 83. NATIONAL GEOGRAPHIC: "Sudan: Arab-Africa Giant", p. 346, Mar. 82. "Somalia's Hour of Need," p. 748, June 81. "Saudi Arabia: The Kingdom and Its Power," p. 284, Sept. 80. "Roadrunner: Clown of the Desert," p. 694, May 83. "El Nino: Global Weather Disaster," p. 144, Feb. 84. "Egypt's Desert of Promise," p. 190, Feb. 82. "Namibia: Nearly a Nation?", p. 755, June 82. Encyclopedias.	

SOCIAL STUDIES: Precipitation - Grade 3
ASSIGN. SCOPE OF LESSON STATEMENT Understand the major areas of precipitation in the U.S.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Relate the information on a rainfall map and correlate the vegetation and crops grown in each area.	1.1 Discuss the vegetation and crops grown in different areas of the U.S. 1.2 Display a map showing the rainfall averages. Study the map carefully. Review discussion points above as related to rainfall. 1.3 Construct a map showing the precipitation of various parts of the U.S.	1.1 Rainfall maps, vegetation maps.	

ART: Precipitation - Grade 3
ASSIGN. SCOPE OF LESSON STATEMENT Create an appreciation of the aesthetic qualities of precipitation through various media.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Choose a method of making puppets that is appropriate for the assignment and then make the puppet.	1.1 Introduce different methods of making puppets: string, sticks, shadow, paper bag, and hand puppets. Then ask children to choose the most appropriate method for making puppets for a fictional story about rain, snow, sleet and hail. When puppets are finished practice and produce the story.	1.1 Refer to Reading for list of books. Dowels, string, popsicle stick, glue, fabric scraps, paint, straws, small paper bags, crayons.	
2. Demonstrate an insight about the colors, lines, and feelings of a rainstorm through a water color painting.	2.1 During a rainstorm talk about the colors, lines, and feelings one sees and feels. Demonstrate how sponges and white crayons can be used to create white areas of a water color painting. Then create a watercolor painting of a rainy day. This may include activities one does indoors on a rainy day.	2.1 Paper, watercolor paint, brushes, water containers, newspaper, sponges, white crayons.	
3. Experiment with a new art process.	3.1 Discuss some of the newest methods of creating art which include using traditional media in new, innovative ways. Brainstorm ways we could use precipitation and one of our traditional art media to produce a new art form. Then allow students to try one of the ideas.	3.1 Will depend on media chosen after discussion.	3.1 Some of the more recent art methods to include in your discussion are: environmental art, spin a painting, air brush painting, junk sculpture, splatter painting, etc.

ART: Precipitation - Grade 3
ASSIGN. SCOPE OF LESSON STATEMENT Create an appreciation of the aesthetic qualities of precipitation through various media (continued).

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
4. Understand how artists illustrate books and illustrate a poem they've written.	4.1 Discuss how artists illustrate books and how closely the pictures relate to the written material. 4.2 Illustrate the poem written on a raindrop which will be attached to the back side of the raindrop and hung in the classroom. Use crayons for medium.	4.1 Small selection of children's books. 4.2 Poem written on a raindrop from Reading/Language Arts, Grade 3, 2.2. Crayons, construction paper.	4.2 Raindrop: Snowflake:

MUSIC: Precipitation - Grade 3
ASSIGN. SCOPE OF LESSON STATEMENT Create an appreciation of the sounds precipitation makes.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Construct a musical instrument that produces a sound involved in a rainstorm.	1.1 Discuss and listen to the sounds of a rainstorm on a recording. 1.2 Brainstorm ways we could make instruments to create our own rainstorm symphony. 1.3 Make the instruments talked about. 1.4 Rehearse and produce the rainstorm.	1.1 Recording of a rainstorm. 1.3 Various materials for making instruments.	
2. Write the rhythm heard in a rainstorm using musical notation and play the music using a handmade instrument from everyday materials.	2.1 Discuss the number of beats each note gets. 2.2 Make a large note of each kind: to be hung in classroom. Review daily. 2.3 Using instruments, (see 1.3), create the rhythm heard of the recorded storm and then write the rhythm using notes.	2.2 White and black construction paper, scissors, pencil, master notes to trace. 2.3 Recording of a rainstorm.	
3. Demonstrate skills needed to read musical notation.	3.1 Review musical notation. 3.2 Sing songs whose lyrics centered around some form of precipitation. In doing so children will each have a copy of the song and can practice reading musical notation of the song.	3.2 Copies of songs about precipitation for each child.	

HEALTH AND PHYSICAL EDUCATION: Precipitation - Grade 3
ASSIGN. SCOPE OF LESSON STATEMENT Gain an understanding of the relationship between recreation and precipitation.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Explain how we depend on precipitation for some of our recreation and how precipitation can also interfere with other forms of recreation.	1.1 Discuss how precipitation interferes with recreation and also how some forms of recreation depend on precipitation either directly or indirectly. 1.2 Choose an appropriate recreation for the season and participate in it.		

HEALTH AND PHYSICAL EDUCATION: Precipitation - Grade 3
ASSIGN. SCOPE OF LESSON STATEMENT Gain an understanding of the relationship between creative movement and precipitation.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Create movements related to precipitation.	1.1 Prior experiences in creative movement and drama should precede this activity. After having listened to a recording of a rainstorm and studied the rhythm of the storm, then create movements for various kinds of storms. Emphasize how the storms usually begin lightly and become more intense and ease up as the storm passes.		1.1 Note: Children can take specific parts of the storm. Rainstorm: thunder, lightening, stillness, wind, pitter-patter of raindrops, intense rainfall, etc. Snowstorm: first floating, drifting flakes of snow, wind driven snow, blizzard, etc. Variations: - move as a person according to the storm. - move as a plant or tree in a storm.

UNIT: WEATHER

Step V. Lesson Plans

Sub-Unit: Clouds - Grade 4

READING: Clouds - Grade 4
ASSIGN. SCOPE OF LESSON STATEMENT Become acquainted with the vocabulary that deals with clouds.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Will spell and define the vocabulary words.	1.1 Arrange the vocabulary dealing with clouds in alphabetical order. 1.2 Perform a phonetic and structural analysis of the vocabulary words. 1.3 Locate the vocabulary words in the dictionary and write their definitons. 1.4 Discuss the words and use in sentences. 1.5 Take a test that includes showing mastery of the definitions and spelling.	1.1 Vocabulary words dealing with clouds. 1.3 Dictionary. 1.5 Test which involves writing the vocabulary word that matches the meaning on the test.	

READING: Clouds - Grade 4
ASSIGN. SCOPE OF LESSON STATEMENT Become better acquainted with clouds through informational and fictional literature.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Use the method of outlining to help organize information read about.	1.1 Read short informational articles about clouds. Outline the information. Verbally summarize the article.	1.1 4th grade science text, encyclopedias, library books.	
2. Will demonstrate skimming techniques.	2.1 Give students specific questions about clouds. Ask them to skim informational literature to locate answers to the questions. If necessary spend some time explaining skimming techniques.	2.1 List of questions about clouds. 4th grade science text, encyclopedias, library books.	
3. Explain the difference between fictional and informational literature.	3.1 Discuss the distinction between fictional and informational literature. 3.2 Read several fictionalized stories about clouds. 3.3 Discuss the stories and tell why stories are fictional and also how some parts are based on true facts.	3.2 Selection of books from the library about clouds (fictional).	

LANGUAGE ARTS: Clouds - Grade 4
ASSIGN. SCOPE OF LESSON STATEMENT Provide opportunity for creative writing through the study of clouds.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Write a story about living on an imaginary cloud or write a story using clouds as major factor in story.	1.1 Brainstorm with students a list of vocabulary words related to clouds. 1.2 Students will write their stories. 1.3 May share with class. 1.4 May illustrate.	1.1 Paper, pencil, crayons.	
2. Write story using picture for story starter.	2.1 Teacher/students will look for cloud pictures in magazines. 2.2 Using a picture of their choice, student will use picture in story in any way they wish. 2.3 May share with class.	2.1 Paper, old magazines. Filmstrip - 8248 PICTURES IN THE SKY, County Superintendent of Schools.	
3. Compose poetry while viewing clouds.	3.1 Discuss rules for poetry writing. Example: length, rhythm pattern. 3.2 Teacher may wish to read several samples to class. 3.3 On a warm day, have students go outside and write a poem while viewing cloud patterns. 3.4 Share with class.	3.2 Poetry about weather (clouds specifically), paper, pencil.	3.2 Filmstrip - 8248 PICTURES IN THE SKY, County Superintendent of Schools.

LANGUAGE ARTS: Clouds - Grade 4
ASSIGN. SCOPE OF LESSON STATEMENT Generate an interest in cloud awareness.

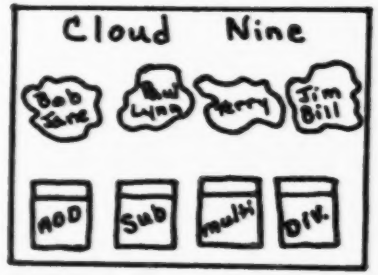
OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Will keep a journal of cloud drawings for a specific time period.	1.1 For 2 weeks students will observe the sky (at a specific time each day) and make drawings of cloud coverings. 1.2 Teacher may wish to display these. 1.3 Students should try to label cloud type each day.	1.1 Small notebook.	
2. Report on a specific cloud type.	2.1 After listing on board all the different cloud types, each student will select one type of cloud to do research on. 2.2 Student will also illustrate cloud type.	2.1 Encyclopedia. Cloud Code Chart - U.S. Dept. of Commerce, WEATHER FORECASTING AS A HOBBY, C.S. Hammond & Co.	

MATH: Clouds - Grade 4
ASSIGN. SCOPE OF LESSON STATEMENT Gain an understanding of how various math skills are used in the study of clouds.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Write and solve math story problems.	1.1 Discuss and identify the essential parts of a math story problem (facts - including unnecessary; facts - question and clue words). 1.2 Write math story problems about clouds. 1.3 Exchange problems with classmates and solve. Return problems to owner and survey results.		
2. Construct a bar graph showing the frequency of cloud types.	2.1 Review the essential items of a bar graph. 2.2 Construct a bar graph on graph paper that will allow the students to record a daily account of the clouds in the sky. 2.3 Record the cloud type daily and after a predetermined length of time compute the frequency of each cloud type. 2.4 Write story problems using information taken from graph. 2.5 Exchange graphs and problems and solve. Then return to owner and discuss results.	2.2 Graph paper.	
3. Demonstrate estimation skills.	3.1 Review methods of estimating. 3.2 Estimate the distance clouds are from the ground by making visual comparisons.		

MATH: Clouds - Grade 4

ASSIGN. SCOPE OF LESSON STATEMENT Gain an understanding of how various math skills are used in the study of clouds (continued).

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
4. Master computational skills.	4.1 Construct a "Cloud Nine" bulletin board that provides worksheets on addition, subtraction, multiplication, and division computational skills. When mastery of each computational skill is acquired the student may join cloud nine of the skill.		4.1 

SCIENCE: Clouds - Grade 4
ASSIGN. SCOPE OF LESSON STATEMENT Increase interest in cloud formations.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Create a cloud in a jar.	1.1 Have students observe following experiment: a) cut neck off balloon; b) put 1/2 c. warm water into gallon jar; c) cover jar opening with the balloon rubber; d) wait several minutes; strike a match, blow it out; while match is smoking, quickly poke it inside the jar and catch the smoke; e) put balloon rubber back over the jar opening and secure it with rubber bands; f) press down firmly on center of balloon rubber, count to five, then pull up very quickly on the center of the rubber piece. If cloud is hard to see, repeat this procedure in dark room while someone shines a flashlight at the jar.	1.1 Gallon jar, large rubber balloon, scissors, wooden matches measuring cup, rubber bands.	1.1 WEATHER, ELECTRICITY, ENVIRONMENTAL INVESTIGATION, p. 24. STORMY WEATHER, ISIS, pp. 38-40, Science-Math Resource Center.
2. Research cloud seeding.	2.1 A group of students or class will investigate the process of cloud seeding and the reasons for it.	2.1 Encyclopedia, MAN AND WEATHER SATELLITES, Walt Disney, pp. 39-41.	
3. Discover what makes clouds move.	3.1 Students will form theories as to why clouds move. 3.2 Class will research answers to their suppositions. 3.3 Discussion and conclusions follow.	3.1 Encyclopedia, STORMY WEATHER, ISIS, pp. 46-48, Science-Math Resource Center. METEOROLOGY, M.E.S.S., Paul Dawson.	

SCIENCE: Clouds - Grade 4
ASSIGN. SCOPE OF LESSON STATEMENT Increase awareness of different cloud formations.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Differentiate between type clouds and weather associated with each.	1.1 Students will research and report on the different kinds of clouds.	1.1 Science-Math Resource Center, WEATHER, Milliken overhead transparency, pp. 3-4. THE WEATHER, Good Apple, p. 12.	
	1.2 Students will be able to predict kinds of weather to expect from each cloud type.	1.2 Movie - 00314 CLOUDS, Bozeman School Dist. 87, GATEWAYS TO SCIENCE, Text, Chapter 9. WEATHER FORECASTING AS A HOBBY, C. S.Hammond.	
	1.3 View movie.		
2. Study severe cloud formations.	2.1 Students will research and report on the different kinds of severe cloud conditions: thunderheads, tornadoes, hurricanes, typhoons.	2.1 Weather texts, encyclopedia, Filmstrip - 0148 THUNDERSTORMS, Gallatin County Superintendent Office, STORMY WEATHER, ISIS, OMLIE SKYMARK'S WEATHER BOOK, U.S. Dept. of Commerce, Movie - 02025, Bozeman School Dist. 87, DAY OF THE KILLER TORNADO.	

SCIENCE: Clouds - Grade 4
ASSIGN. SCOPE OF LESSON STATEMENT Coordinate clouds with flight patterns and weather maps.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Become aware of how clouds affect flight schedules.	1.1 Invite pilot to class to discuss how cloud formations influence flights made (include fog).	1.1 Larry Creekmore - Bozeman. Neal Reavely - Bozeman.	
2. Trace cloud movement over U.S. in one week.	2.1 Using old weather maps, students will follow and chart distances clouds moved in a one week time period. 2.2 Students may look for trends and repeated patterns in cloud movement. 2.3 Student may give explanations for cloud movements; i.e., cold/warm fronts; high/low pressure areas.	2.1 Old weather maps (for 5-7 day periods) from F.A.A. at airport.	

SOCIAL STUDIES: Clouds - Grade 4
ASSIGN. SCOPE OF LESSON STATEMENT Provide opportunity for students to map cloud conditions.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Design a state map showing cloud coverings.	1.1 Using weather forecast from newspaper and video of morning weather map, students will fill in cloud formations on a state map outline.	1.1 Newspapers, video of A.M. weather forecast, outline map of state.	
2. Design a specific weather scene, showing various types of cloud formations.	2.1 Teacher will assign each student a seasonal scene with a specific cloud coverings. 2.2 Students may use cotton for cloud patterns.	2.1 Drawing paper, crayons, cotton, glue.	

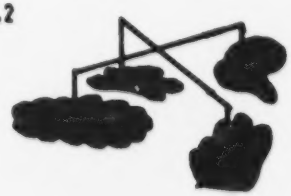
SOCIAL STUDIES: Clouds - Grade 4
ASSIGN. SCOPE OF LESSON STATEMENT Increase cloud awareness through graphing and mapping.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Graph number of hurricanes occuring each month off southern coast of U.S.	1.1 Students will research information. 1.2 In groups of 2, student will design a bar graph showing number of hurricanes sited each month.	1.1 World almanac.	
2. Become aware of cloud covering symbols.	2.1 Teacher will hand out a prepared ditto of various cloud symbols. 2.2 Students may review symbols with each other (flash cards). 2.3 Students may wish to post the appropriate symbol for the day.	2.1 WEATHER, ELECTRICITY, ENVIRONMENTAL INVESTIGATIONS, p. 29. CLOUD CODE CHART, U.S. Dept. of Commerce.	

SOCIAL STUDIES: Clouds - Grade 4
ASSIGN. SCOPE OF LESSON STATEMENT Provide opportunity for further cloud information research.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Study folklore and legends associated with clouds.	1.1 Student will read various myths and legends that deals with clouds. 1.2 Share with class.	1.1 Books of Indian folklore, legends and myths.	
2. Research work of Luke Howard.	2.1 Luke Howard, an English meteoralogist in 1803, is an exciting topic for students interested in further study.	2.1 Encyclopedias.	

ART: Clouds - Grade 4
ASSIGN. SCOPE OF LESSON STATEMENT Gain an appreciation of the aesthetic qualities of clouds through various media.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Demonstrate how to use water color paint to make subtle shade variations.	1.1 Show how watercolor paint can be used in subtle shade variations and how this technique can be used to make clouds. 1.2 Make a shade scale of one color. Then paint the different clouds using the skills above. Cut clouds out and use in making a mobile later.	1.2 Watercolors, water containers, brushes, white paper, newspaper, scissors.	1.2
2. Demonstrate how to make a mobile that is balanced.	2.1 Discuss what a mobile is and how balance is attained. 2.2 Construct a cloud mobile displaying the various types of clouds.	2.2 Construction paper, string, glue, clouds (made in 1.2).	2.2 
3. Demonstrate use of shading and wash techniques using watercolor paint.	3.1 Review the watercolor technique in Art 1.1. Introduce wash technique. Discuss how clouds and their colors create a mood in a landscape. 3.2 Paint a moody landscape using the above techniques.	3.1 White paper, watercolor paint, brushes, water containers, small sponges, newspaper.	
4. Analyze the obvious attributes of a particular cloud and summarize those qualities in a puppet.	4.1 Discuss the attributes of each kind of cloud and brainstorm how we can use those unique attributes to create a cloud puppet. 4.2 Make a cloud puppet. 4.3 Present each puppet with a description of the cloud written in the first person.	4.2 Paper, cloth, yarn, thread, needles, crayons, glue, old socks.	

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MUSIC: Clouds - Grade 4
ASSIGN. SCOPE OF LESSON STATEMENT Develop an appreciation for music as it relates to clouds.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Create new lyrics to familiar tunes.	1.1 Students will listen to and sing some simple, familiar tunes. 1.2 Students will write new lyrics to the old tunes, using clouds as a theme. 1.3 Students will share lyrics with classmates, and lead class in singing new songs.	1.1 Music to "Row, Row, Row Your Boat," "Mary Had a Little Lamb," "Mulberry Bush."	
2. Develop a list of songs about clouds.	2.1 Students will brainstorm songs about clouds or having "clouds" in them. 2.2 List on board. 2.3 Sing several tunes.	2.1 "Home on the Range," several story books.	

HEALTH AND PHYSICAL EDUCATION: Clouds - Grade 4

ASSIGN. SCOPE OF LESSON STATEMENT Gain an understanding about the creative ingredients involved in physical education activities.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Create movements demonstrating how they imagine they would move on a cloud.	1.1 Discuss how clouds affect our moods. 1.2 Imagine you live in a cloud and show how you would move around.		
2. Create a new game using ideas from a traditional game.	2.1 Play a new version of "Simon Says," using the cloud theme. Instead of "Simon Says," use "Cumulous Says." Encourage the children to help create the game.		

UNIT: WEATHER

Step V. Lesson Plans

Sub-Unit: Weather Recording/Forecasting - Grade 5

READING: Weather Recording - Grade 5
ASSIGN. SCOPE OF LESSON STATEMENT Increase students' word recognition through a weather vocabulary.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Attains reading vocabulary.	1.1 Brainstorm and list on paper words relating to topic.	1.1 Texts and books on weather.	
2. Attains a writing/speaking vocabulary by applying a phonetic analysis to each word.	2.1 From a given list of words and dictionary students will phonetically spell each word and be able to pronounce each word. 2.2 In groups of 2, students can practice pronouncing words to each other.	2.1 Dictionary for each child.	
3. Uses rules for dividing words into syllables.	3.1 Given a list of "weather" words student will divide words into syllables. 3.2 Teacher will quiz students' ability with prepared list.	3.1 Dictionary.	

READING: Weather Recording - Grade 5
ASSIGN. SCOPE OF LESSON STATEMENT Provide material on weather for research and investigating.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Learn how Indian folklore, legends and myths addressed the topic of weather forecasting.	1.1 Students will read or listen to stories to discover how weather forecasting is found in these specific kinds of writing. 1.2 Discuss and share findings with class.	1.1 Teacher may want to take class to Bozeman Public Library to research these Indian folklore, myths and legends.	
2. Discover how weather forecasting has progressed in the last century.	2.1 By researching weather texts and books, students (in pairs) will seek to find evidence how weather forecasting has changed (1800-1900's). Example: simple weather instruments - weather satellites.		2.1 May also require trip to library. VTCS - 166 THE WEATHER MACHINE, Bozeman Dist. 87. Movies: 0849, 0850, 0851, 0852, 0853 - Weather Science Series, Bozeman District 87.
3. Research weather forecasting in FARMER'S ALMANAC.	3.1 By providing students with several old copies of FARMER'S ALMANAC, they will read to see how weather forecasting was often done. 3.2 Report findings to class.	3.1 Copies of FARMER'S ALMANAC.	
4. Locate information on weather satellites used today.	4.1 Students will read from texts provided, how weather satellites today play a crucial role in weather forecasting. 4.2 Students will report findings and share with class.		4.1 Encyclopedia, information from weather bureau, current weather books, resource person - local weather forecaster. MAN AND WEATHER SATELLITES, Walt Disney Movie - 00905 - Bozeman School District 87, SATELLITES - SERVANTS IN THE SKY.

LANGUAGE ARTS: Weather Recording - Grade 5
ASSIGN. SCOPE OF LESSON STATEMENT Provide opportunities for creative writing.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Writes paragraphs expressing feelings in different situations.	1.1 Using different weather pictures provided by teacher, students will write short paragraphs about how they feel in different weather situations. 1.2 Share with class.	1.1 THE WEATHER, Good Apple, p. 19.	
2. Writes a story dealing with a specific situation.	2.1 Given this situation - in Spearfish, South Dakota, the temperature rose 49 degrees in 2 minutes one day - January 22, 1942. The student will create a story as to cause of situation, or their reaction to it.	2.1 WEATHER, ELECTRICITY, ENVIRONMENTAL INVESTIGATION, pp. 32-33.	
3. Discusses and write meanings of weather sayings and lore.	3.1 Students are given a list of different weather sayings - some to be discussed, some to be defined on paper.	3.1 THE WEATHER, Good Apple, p.2. WEATHER, ELECTRICITY, ENVIRONMENTAL INVESTIGATION, p. 7.	

LANGUAGE ARTS: Weather Recording - Grade 5
ASSIGN. SCOPE OF LESSON STATEMENT Prepare letters of inquiry requesting weather information.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Is able to apply rules of letter writing for a specific purpose.	1.1 Student will review parts of business letter. 1.2 Losing various addresses provided by teacher, students will write business letters requesting specific information.	1.2 Teacher can obtain a list of weather booklets, charts and maps that are free of charge or for a small fee by writing to: Supt. of Documents U.S. Government Printing Office Washington, D.C. 20402	

LANGUAGE ARTS: Weather Recording - Grade 5
ASSIGN. SCOPE OF LESSON STATEMENT Provide opportunity to design word searches crossword puzzles using weather vocabulary.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Design a word search or crossword puzzle.	1.1 Students will brainstorm a vocabulary of "weather" words. 1.2 Students will then use these words to create either a word search or crossword puzzle. 1.3 These can be done on a computer using specific software. 1.4 Students will share puzzles with classmate.	1.3 Computer software: a) "Hartley's Wordsearch," b) "Crossword Magic," by L & S Computerware.	

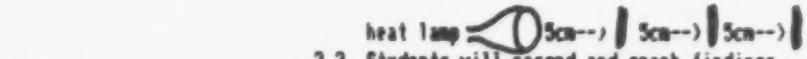
LANGUAGE ARTS: Weather Recording - Grade 5
ASSIGN. SCOPE OF LESSON STATEMENT Provide opportunities for journal recording.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Keeps a daily journal for a specific time period.	1.1 In a small notebook, each student will make a brief daily entry, stating weather conditions and their reactions to the weather. 1.2 This journal is to be kept for a specific time period and may be shared at any time with "classmates."	1.1 Small notebook for each child.	

MATH: Weather Recording - Grade 5
ASSIGN. SCOPE OF LESSON STATEMENT Provide opportunity for creation of word problems dealing with weather maps and weather information.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Develop word problems using weather map temperatures.	1.1 Using addition and subtraction, students will write 10 word problems involving temperatures from weather maps. 1.2 Exchange with classmate.	1.1 Old weather maps from FAA. Example: Difference between a state on Monday & Friday. Add high temps from 4 northern states, and high temps from 4 southern states.	
2. Develop word problems using weather map distances.	2.1 Discuss how to find distances between cities using scale on map. 2.2 Student will write 5 problems finding distances between certain locations on map. Examples: Distances between high and low pressure area; distance between cold and warm front; and distance between coldest and warmest spot. 2.3 Share problems with classmate.	2.1 Rulers, encyclopedia or map of U.S. from FAA. SCOTT FORESMAN SCIENCE, activity - p. 24.	
3. Develop word problems using barometric readings or precipitation amounts.	3.1 Students will write an x-number of problems showing differences in barometric readings over 2 days (decimals), or differences in amounts of precipitation on 2 different days (hundredths). 3.2 Share with classmate.	3.1 Old newspapers, old weather maps from FAA.	

MATH: Weather Recording - Grade 5
ASSIGN. SCOPE OF LESSON STATEMENT Introduce graphing as it relates to weather recording.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Will be able to graph temperature readings from different days.	1.1 Students will collect temperature readings for a two week period. 1.2 After introduction to bar graphs, students will graph data on either horizontal or vertical bar graphs.	1.1 THE WEATHER, Good Apple, p. ii., graph paper.	
2. Will be able to graph temperature readings at different distances.	2.1 Students will set up following experiment: Thermometers at different distances from heat lamp.  2.2 Students will record and graph findings. 2.3 Share findings.	2.1 Heat lamp, 4-5 thermometers, cm ruler, graph paper, SCOTT FORESMAN SCIENCE, activity - p. 25.	

SCIENCE: Weather Recording - Grade 5
ASSIGN. SCOPE OF LESSON STATEMENT Develop an understanding of the basic instruments of weather forecasting - their construction and use.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Design and use common weather instruments.	1.1 Make a wind vane.	1.1 Bottle, 50 cc dowel, tape, ruler, construction paper.	1.1 SCOTT FORESMAN SCIENCE ACTIVITY, p.3. WEATHER ELEC. ENVIRONMENTAL INVESTIGATIONS, p. 15. Movie - 80489, WIND AT WORK, Bozeman School Dist. 87. "Weather Experiments," CHILDREN'S PRESS, p. 39.
	1.2 Make an anemometer to measure wind speed.	1.2 Fishing line, needle, ping-pong ball, protractor, tape, 1 piece soft wood (1.25 cm x 1.25 cm x 20 cm), glue.	1.2 WEATHER, ELEC. ENVIRONMENTAL INVESTIGATIONS, p. 14. "Weather Experiments," CHILDREN'S PRESS, p. 40. DEFINING, OBSERVING AND RECORDING WEATHER, Science-Math Resource Ctr.
	1.3 Make a barometer to measure air pressure.	1.3 Thermos bottle, large balloon, rubber bands, straw, glue, large cereal box, white paper, ruler, pen, scissors.	1.3 WEATHER ELEC. ENVIRONMENT INVESTIGATIONS, P. 21. "Weather Experiments," CHILDREN'S PRESS, p. 42.43.
	1.4 Make a hygrometer to measure humidity.	1.4 Oatmeal carton, rubber bands, 2 indoor/outdoor thermometers, white cotton shoestring, baby food jar, ruler, scissors.	1.4 WEATHER ELEC. ENVIRONMENTAL INVESTIGATIONS, p. 21. "Weather Experiments," CHILDREN'S PRESS, p. 42-43.

SCIENCE: Weather Recording - Grade 5
ASSIGN. SCOPE OF LESSON STATEMENT Develop an understanding of the basic instruments of weather forecasting - their construction and use (continued).

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
2. Collect and record information about daily weather conditions.	2.1 Do temperature and barometric pressure readings for 2 week period. 2.2 Graph readings. 2.3 Share with class.	2.1 "The Weather," 8000 APPLE, p.ii.	
3. Predict weather conditions.	3.1 Students will predict, using prepared chart, the temperature, cloud cover, wind speed and weather type on a certain time each day for 2 weeks. 3.2 Tally number of correct predictions made. 3.3 Discuss means used to predict each day.	3.1 "The Weather," 8000 APPLE, p. 17.	
4. Define air pressure and its relationship to weather.	4.1 Read and research material provided by teacher as to definition of air pressure. 4.2 Find out how air pressure changes affect weather. 4.3 Have students check air pressure readings each day for 2 weeks to test findings.	4.1 STORMY WEATHER, ISIS. 4.2 Use barometer made in 1.3.	

SCIENCE: Weather Recording - Grade 5
ASSIGN. SCOPE OF LESSON STATEMENT Increase appreciation for weather predicting agencies and their influenced on aviation.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Observe weather maps being used.	1.1 Visit Bozeman airport (FAA) weather station. 1.2 Have guide explain to class how weather maps are obtained and used by FAA and pilots.	1.1 Fieldtrip to airport (Belgrade).	
2. Learn how weather forecasting affects flight scheduling.	2.1 Invite a pilot to the class to hear how flights are affected by weather.	2.1 Neal Reavely - Bozeman. Larry Creekmore - Bozeman.	

SOCIAL STUDIES: Weather Recording - Grade 5
ASSIGN. SCOPE OF LESSON STATEMENT Generate an appreciation for weather mapping and its importance.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Identify various symbols used on weather maps.	1.1 Using a teacher prepared handout, student can identify windspeed symbols, cloud covering symbols, and weather type symbols.	1.1 THE WEATHER, Good Apple, p. 18. WEATHER FORECASTING AS A HOBBY, C.S. Hammond & Company.	
2. Prepares map of state with symbols for a specific day.	2.1 Using an outline map of Montana and a weather report from newspaper, each student will put appropriate symbols on map. 2.2 Students will compare with partner.	2.1 Map outline of Montana, newspaper. May want to video tape a weather report from A.M. news show.	
3. Discover changes in weather conditions over a 5 day period.	3.1 In groups of 2 or 3, students will compare maps of same area over a 5 day period to note changes in conditions. 3.2 2 groups should list changes on paper and share with class.	3.1 Old weather maps from FAA in Belgrade.	
4. Attempt to predict what the weather will be like on a specific date.	4.1 In groups of 2, students study weather maps of an area for 4 days. Students look at fronts, H/L pressure areas, temperatures, wind conditions, and cloud covering. Students predict what the weather will be like. 4.2 Teacher will have the weather map from the 5th day. Class discusses results.	4.1 Weather maps from FAA for a 5 day period (several sets). Video - 8166 WEATHER MACHINE, Bozeman School Dist. 87.	

SOCIAL STUDIES: Weather Recording - Grade 5
ASSIGN. SCOPE OF LESSON STATEMENT Generate an appreciation for weather mapping and its importance (continued).

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
5. Decide suitable location for flight travel, crop planting, vacationing, etc.	5.1 With entire class viewing the same weather map, students will study and decide which areas of state/country look suitable for various conditions: a) flight travel; b) planting of crops; c) vacationing; d) traveling; picnicing.	5.1 Weather map from FAA in Belgrade.	

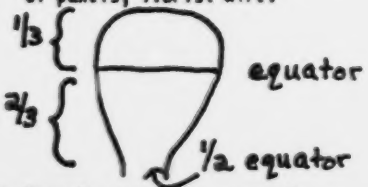
ART: Weather Recording - Grade 5

ASSIGN. SCOPE OF LESSON STATEMENT Provide students with an opportunity to creatively design weather related art forms.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Design a wind sock.	1.1 Students will view several different style wind socks.	1.1 Several sample wind socks.	
	1.2 Students will design on paper their own wind sock.	1.2 Paper, pencil.	
	1.3 Using tissue paper, students will construct a wind sock.	1.3 Tissue paper, glue.	
2. Design and construct a kite.	2.1 Have a kite demonstration.	2.1 Kite shop in Bozeman.	2.1 LET'S GO FLY A KITE, Estes. AEROSPACE PROJECTS FOR YOUNG CHILDREN, Caballero, Jane.
	2.2 Discuss necessary features of kite.	2.2 Gussets.	
	2.3 Design a simple kite.		
	2.4 Construct and fly kites.	2.4 Tissue paper, string, tape, bags (Penney's).	
3. Design and construct a wind chime.	3.1 Show several sample wind chimes to class.	3.1 Sample wind chimes.	
	3.2 Discuss different "sounds" made by different materials.		
	3.3 Design a simple wind chime.	3.3 Paper, pencil.	
	3.4 Construct wind chime.	3.4 Metals, plastics, pottery, fishing line, sticks, wire.	
4. Design different weather conditions on similar landscape.	4.1 Have students all draw simple, similar background on paper; i.e., mountains, hills, trees, cabin.		
	4.2 Have a certain number of students drawing sunny conditions on background, rain, snow, wind, etc.		
	4.3 Compare with class.		

ART: Weather Recording - Grade 5

ASSIGN. SCOPE OF LESSON STATEMENT Provide students with an opportunity to creatively design weather related art forms (continued).

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
5. Design a weather map using new weather symbols.	5.1 Given a large piece of paper with the state outline, students will create a fictitious weather pattern using new weather symbols. 5.2 Maps must contain legends to explain symbols. 5.3 Share with class.	5.1 Large outline map of state, pencils, markers, or colored pencils.	
6. Design a hot air balloon.	6.1 Discuss principles of hot air ballooning. 6.2 Discuss basic construction - show sample of possible. 6.3 Construct balloons in groups of 3-5. 6.4 Fly balloons.	6.3 AEROSPACE PROJECTS FOR YOUNG CHILDREN, Cabellero, Jane. Tissue paper, glue, paper patterns of panels, florist wire:  6.4 Campstove or fire, several 3 lb. coffee cans to form chimney.	

MUSIC: Weather Recording - Grade 5

ASSIGN. SCOPE OF LESSON STATEMENT Develop an appreciation for music as it relates to weather.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Design musical instruments relating to wind.	1.1 Have sample instruments using wind/blowing: whistles, woodwinds, windchimes. 1.2 Listen to sample sounds. 1.3 Have students experiment with constructing simple whistles or chimes. 1.4 Share "music" with classmates.	1.1 Woodwind instruments, whistles, windchimes. 1.3 Straws, reeds. See Art, activity 3.	
2. Listen to music with "weather words."	2.1 Have students brainstorm titles of songs that have weather words in them - list on board. 2.2 Either sing or listen to "weather songs."		

HEALTH AND PHYSICAL EDUCATION: Weather Recording - Grade 5
ASSIGN. SCOPE OF LESSON STATEMENT Generate enthusiasm for body movement in relation to the weather.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Recognize wind direction.	1.1 Have class run into the wind. 1.2 Have class run with wind at back.	1.1 Windy day.	
2. Recognize effects of weather on running.	2.1 Have students jog a specific distance in different weather conditions. 2.2 Keep a journal of findings.	2.1 Cool day, warm/hot day, drizzling weather, windy weather, notebook.	
3. Fly kites made in art class.	3.1 Students need a large grassy area away from electrical lines, large trees, buildings. 3.2 Enjoy!	3.1 Kites, string.	

UNIT: WEATHER

Step V. Lesson Plans

Sub-Unit: Water - Grade 6

READING/LANGUAGE ARTS: Water - Grade 6
ASSIGN. SCOPE OF LESSON STATEMENT Appreciate the relationship between the water cycle and weather.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Read textbook information about the water cycle.	1.1 Read together and discuss information about the water cycle.	1.1 Science textbooks. SILVER BURDETT, Grade 6, p. 214. ACCENT ON SCIENCE, Grade 6, p. 227.	
	1.2 Draw the water cycle.	1.2 Weather transparencies - WATER CYCLE, Milliken Pub. Co.	
	1.3 Discuss "precipitation phase." List forms of precipitation - weather patterns that result.		1.3 Hail, sleet, rain, snow, etc.
	1.4 Optional weather crossword puzzle water cycle.	1.4 "The Weather," water cycle crossword, GOOD APPLE: CA 456.	

READING/LANGUAGE ARTS: Water - Grade 6
ASSIGN. SCOPE OF LESSON STATEMENT Recognize word types in list of water words.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Brainstorm to generate list of water words.	1.1 Use butcher paper or chalkboard to record all words relating to water. Students work together to supply words in oral discussion.		1.1 Teacher should ellicit various types of water words. May wish to save for lesson p. 7.
2. Identify and label nouns, verbs, adjectives, and adverbs.	2.1 Find and label all nouns on group list. Follow same procedure for verbs, adjectives, and adverbs. Quick review of each word type may be necessary. See experience chart.		2.1 Noun: person, place thing. Verb: action word. Adjective: modifies a noun (describes). Adverb: modifies a verb.
3. Apply knowledge of antonyms, synonyms and homonyms to generate new word lists.	3.1 Review antonyms, synonyms, homonyms. 3.2 Challenge children to find homonyms to words on original list (most difficult). Do the same for synonyms (difficult) and antonyms (easiest).		3.1 Synonyms: words that mean the same or nearly the same. Antonyms: words that mean the opposite. Homonyms: words that sound the same.

READING/LANGUAGE ARTS: Water - Grade 6
ASSIGN. SCOPE OF LESSON STATEMENT Appreciate the severity of water problems.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Read and discuss information regarding various water problems.	1.1 Students should locate books and/or articles about water problems. (See experience chart). Use card catalog, encyclopedias, and readers guide. (Review of these skills may be necessary). Teacher supply of books might be helpful. 1.2 Spend SSR (silent sustained reading) time reading information. 1.3 Discuss as group or have individuals present information about various water problems. 1.4 Discuss prevention and treatment of these problems.	1.1 Teachers' Resource Center: books, files, pamphlets.	1.1 Water Pollution, Acid Rain, Erosion, Siltation, Disasters - Flooding, Tsunami.

READING/LANGUAGE ARTS: Water - Grade 6

ASSIGN. SCOPE OF LESSON STATEMENT 1. Understand writing in the first person.
2. Demonstrate knowledge of phases of the water cycle.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Write a story in the first person as a drop of water.	1.1 Review phases of the water cycle. Can evaporation occur immediately before precipitation? (No - condensation first).		
	1.2 Review "first person" style of writing, and pronouns needed.		1.2 I, me, mine, my.
	1.3 Think about life as a drop of water. and all the changes that would take place.	1.3 "Buttercup," 7 min. film, traces movement of buttercup from mountain stream to the ocean.	
	1.4 Write a story. "Be" a drop of water. Discuss your life - your travels, adventures, close calls, changes, etc.	1.4 Make large raindrop shaped paper.	
	1.5 Read and share together.		

READING/LANGUAGE ARTS: Water - Grade 6
ASSIGN. SCOPE OF LESSON STATEMENT Understand various poetry types and write poems using the water theme.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Study common poetry forms and write poems using water as the theme.	1.1 Use English books, poetry books, etc. to read examples of various poetry types. 1.2 Brainstorm subtopics within the water theme. 1.3 Assign one (or several) poetry form(s) for students to write. 1.4 Students may illustrate final copies. 1.5 Display on poetry bulletin board.	1.1 Jerry Sullivan's handout - "Common Poetic Forms."	1.1 Free Verse, Couplet, Quatrain, Haiku, Tanka, Senryu, Cinquain, Limerick, Diamante. 1.2 Water cycle - or particular phase. Water pollution. Famous water bodies. Various forms of water, snow, ice, etc.

READING/LANGUAGE ARTS: Water - Grade 6
ASSIGN. SCOPE OF LESSON STATEMENT Understand oral presentation technique.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Study technique involved in presenting a demonstration speech.	1.1 Go over parts of a demonstration speech. 1.2 Brainstorm ideas for capturing and holding the attention of the audience.	1.1 Speech communications texts.	1.1 I. Purpose of speech. (7-20 min. including VI). II. Explanation of equipment needed. III. How to. IV. Locations. V. Appropriate for what age level. VI. Question and answer time.
2. Present demonstration speeches where water is the main ingredient or necessary element.	2.1 Brainstorm topic ideas. 2.2 Prepare speeches (homework). 2.3 Presentations. 2.4 Critique.		2.1 Water skiing, snow skiing, swimming, human body, Koolaide.

READING/LANGUAGE ARTS: Water - Grade 6
ASSIGN. SCOPE OF LESSON STATEMENT Understand use of apostrophe in possessives.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Use apostrophes in correct spots when forming possessives from list of water related words.	1.1 Generate list of water words, or use lists from p. 1. 1.2 Teach correct use of apoostrophe in forming possessives (singular and plural). 1.3 Form possessives of water words and use in sentences.	1.2 English textbook.	

READING/LANGUAGE ARTS: Water - Grade 6
ASSIGN. SCOPE OF LESSON STATEMENT Understand difference between fact and opinion.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Write fact and opinion statements about water.	1.1 Review "fact" and "opinion." Read examples of each and have students identify. 1.2 Use productive thinking talent to write the "many varied," "unusual facts," about water, (together or individually). 1.3 Use productive thinking talent to write the "many varied," "unusual opinions," about water, (together or individually). 1.4 These can readily be used for reading bulletin board.	1.1 Textbooks in various content areas.	1.1 Fact: something that can be proven. Opinion: cannot be proven; person thought/feeling.

READING/LANGUAGE ARTS: Water - Grade 6
ASSIGN. SCOPE OF LESSON STATEMENT Recognize the use of written English to express personal ideas, thoughts, and feelings.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Write personal perceptions about the relationship between weather and human moods and activity.	1.1 Discuss various forms of precipitation and the weather patterns which coincide. Ask, "How do you feel during each?" "What activities do you undertake?" 1.2 Discuss various water bodies and their respective color. Ask, "How does each make you feel?" "Does the color affect your mood?" "What activities do you undertake in each?" 1.3 Follow the same discussion pattern for water temperature. 1.4 Assign a written summary. Students should write their personal ideas, feelings, thoughts about how precipitation type, water color, and water temperature, effects human mood and activity.		1.1 Rain: occasional thunder storms, cooler, often windy. Snow: cold, sometimes windy. Sleet - cold, usually windy. Hail - cold, could be cloud burst between blue sky. 1.2 Muddy river - brown. Lake or pond full of algae - dark green. Mountain lake or stream - clear light green or blue. Swimming pool - light green or blue.

READING/LANGUAGE ARTS: Water - Grade 6
ASSIGN. SCOPE OF LESSON STATEMENT Understand use of tape recorder for recording and playback.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Make tape recording of water sounds.	1.1 Discuss sounds made by water.		1.1 Lapping against shore, draining bathtub, dripping ice melt from a roof onto wood, plastic, metal, grass, etc., toilet flushing, person diving into water, rainfall, snowfall, sleet, hail, irrigation ditch being flooded, etc.
	1.2 Teach method of recording on tape recorder to be used.	1.2 Tape recorder, microphone.	
	1.3 Assign pairs of students to create a water sounds tape. May be real sounds or sounds manipulated to represent water sounds. Should have at least 5 examples.		
	1.4 Play each for class and have students guess what each sound is.		

READING/LANGUAGE ARTS: Water - Grade 6

ASSIGN. SCOPE OF LESSON STATEMENT 1. Develop an appreciation for books.
2. Develop listening skills.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Listen to a story read continually for several days.	1.1 Read aloud to students on a daily basis. Choose a story that relates to water.	1.1 Examples: THE SNOWFLAKE, Gallico, Paul. KON-TIKI, Hyrdall, Thor.	

MATH: Water - Grade 6
ASSIGN. SCOPE OF LESSON STATEMENT Appreciate the use of math skills in our daily lives.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Write math word problems using multiplication and division with three digits.	1.1 Review 3 digit multiplication and 3 digit division. Discuss how we apply this in daily life. Discuss ways we could tie this in with the the water theme.		1.1 Possible ideas: Sailing distances - several trips, costs, number of people aboard ship, ocean depths, scuba divers salvaging. Gallons used to fill up tub, people in apartment complex or neighborhood. Gallons used to wash dishes, take a shower, water the garden, etc. Snow depth, skiing distances, swimming.
	1.2 Assign: Write 5-10 word problems using 3 digit multiplication and division and having to do with water. When you finish exchange with a friend.		
2. Solve math word problems using multiplication and division with 3 digits.	2.1 Solve word problems, that someone else wrote, using pencil and paper.		
3. Use a calculator to check answers.	3.1 Have calculators available so students correct their own papers.		3.1 Brief reminders of appropriate use of calculators may be necessary.

MATH: Water - Grade 6
ASSIGN. SCOPE OF LESSON STATEMENT Understand importance of complete data for solution of math problems.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Write word problems with incomplete data.	1.1 Read several word problems aloud leaving out a key component to the problem. Have students supply necessary component in discussion. 1.2 Discuss how we relate to water theme. 1.3 Have students write 5-10 word problems in which they leave out key components. Exchange papers.	1.1 Math textbook word problems.	1.1 Simple example: There are 3 feet in one yard. How many feet is it from my desk to your chair? (Component missing: it is 4 yards from my desk to your chair). 1.2 See mathematics p. 1.
2. Identify data that is missing in math word problems.	2.1 Have students write down the type of information that is missing in each problem. Discuss. 2.2 Variation: students supply missing data and return problems to original writer for solving and checking with calculator.		

MATH: Water - Grade 6
ASSIGN. SCOPE OF LESSON STATEMENT Understand conversion techniques when units of measure are inconsistent.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Write problems with inconsistent units of measure.	1.1 Discuss how we convert when problems are written with inconsistent units of measure. Do not convert between systems. 1.2 Discuss how we can write similar problems that relate to our water theme. 1.3 Have students write 5-10 word problems with inconsistent units of measure. Exchange papers.		1.1 Example: The skiier skiied an average of 5,000 yards per hour. How many miles did she/he ski in 3 hours? (DO NOT convert km to miles, etc.). 1.2 See mathematics p. 1.
2. Solve problems with inconsistent data where conversion is necessary.	2.1 Have students solve problems written by their peers. Check with calculators.		

MATH: Water - Grade 6
ASSIGN. SCOPE OF LESSON STATEMENT Comprehend water displacement and how to calculate amounts of displacement for various objects.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Calculate water displacement of various objects including those that sink and those that float.	1.1 Provide buckets, wash basins, sinks, etc., full of water and various objects that sink and float. Ask students to explore properties of each. After a few minutes, ask students to observe what happens to water level when an object enters the water. Is it different when similar sized objects sink and float? 1.2 Discuss water displacement. How could we measure the amount of water displaced by various objects? 1.3 Assign the following float/sink activity. Design a structure which will float for at least 1 minute and no more than 5, at which time it will sink. Calculate the water displacement at the float stage and then at the sink stage. 1.4 Have a float/sink demonstration day. Have students share their projects, discuss their design ideas and testing techniques, and do the demonstration of their project. Discuss displacement calculation results.		1.2 Supply marked cylinders, measuring cups, etc. (Discuss importance of accuracy).

MATH: Water - Grade 6
ASSIGN. SCOPE OF LESSON STATEMENT Develop the skill of translating written data to a graph.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Record precipitation amounts for 1 week (or several) and create a bar graph to display gathered data.	1.1 Discuss how to measure precipitation. 1.2 Assign a given period of time for data to be collected. Encourage students to make a chart to organize their daily data. 1.3 Bring data to class and discuss how to transfer this to a bar graph. 1.4 Students make graphs. 1.5 Display on bulletin board (or with or without data charts).	1.1 SILVER BURDETT, Grade 6, Chapter 11, or other science textbooks with weather chapters. Graph paper. 1.3 Use examples in math text.	1.1 Use marked container. Put in a spot where protected from wind, but with no shelter above. 1.2 Example: PRECIPITATION Amount/inches Type Mon/Feb 2 Tues/Feb 3 Wed/Feb 4

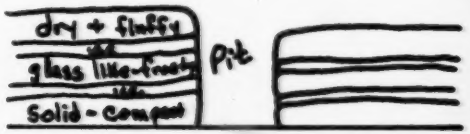
SCIENCE: Water - Grade 6
ASSIGN. SCOPE OF LESSON STATEMENT Understand the effects of temperature on water.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Observe and chart the effects of temperature on water.	1.1 Discuss what effects temperature has on water. Discuss ways to prove or observe hypotheses. 1.2 Have students develop a plan for observing water and different temperatures. Students should have some way to measure the temperature and record all data. 1.3 Have students display their data on a chart, graph, table, etc. 1.4 Share, discuss and display on bulletin board.	1.3 Graph paper.	1.2 Possible plans: a) Use fire for heat, cold nights for cooling. b) Use stove and ice cubes. c) Use stove and freezer.

SCIENCE: Water - Grade 6
ASSIGN. SCOPE OF LESSON STATEMENT Develop an understanding of the varieties of snow.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Study snow structure, (crystal types, layering, amount of water, etc.).	1.1 Begin by explaining that there are many types of snow. The Eskimos have a separate word for each type. Ask if anyone has ever noticed the differences in snow types while skiing, shoveling, etc. What causes these differences?	1.1 THE SNOW WALKER, THE DESPERATE PEOPLE (trilogy), both by Farley Mowat.	1.1 This lesson should be taught during a snowy/stormy month.
	1.2 View classification charts of snow crystals.	1.2 Zerox copies on file for this unit at Teachers' Resource Center or FIELD GUIDE TO SNOW CRYSTALS, LaChapelle, Edward R., University of Washington Press, Seattle, Washington. AVALANCHE HANDBOOK, Agriculture Handbook 439, U.S. Dept. of Agriculture, Forest Service.	
	1.3 Use hand lenses outside and try to observe specific types of crystals (not easy unless fresh snow has fallen as crystals metamorphose within hours of falling).	1.3 Hand lenses or magnifying glasses.	
	1.4 Discuss layering of different snow crystal types. Explain melding and metamorphosis that takes place due to temperature changes, pressure, etc.		

SCIENCE: Water - Grade 6
ASSIGN. SCOPE OF LESSON STATEMENT Develop an understanding of the varieties of snow (continued).

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
	1.5 Go outside and dig a snow pit. Have students examine the layering. Have students draw a diagram of the layering they observed and describe each layer. Discussion can include identification of layers which would be likely to slide (avalanche). 1.6 Have students collect equal amounts of various snow types. Bring indoors to melt. Measure amount of water from each. Discuss. 1.7 The above activities could easily facilitate creation of an information bulletin board, a class book, log, etc.	1.5 Excellent guides for teacher in AVALANCHE HANDBOOK mentioned in 1.2.	1.5 Possible observation. 

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SCIENCE: Water - Grade 6
ASSIGN. SCOPE OF LESSON STATEMENT Understand involvement of water in the life cycle of a terrarium.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Build a terrarium and record daily observations of moisture.	1.1 Discuss a terrarium. Read information explaining key components to the terrarium. 1.2 Ask students to collect necessary materials, (one large terrarium or several small). 1.3 When supplies are assembled, allow each child to participate in the construction of the terrarium(s). 1.4 Develop a classroom chart where students take turns recording daily observations of the terrarium - especially the moisture - or have shapes journals or logs for information recording. 1.5 Have on going discussion about daily observations.	1.1 Science textbooks, encyclopedias, dictionary definition.	1.5 Elicit from students that the terrarium has a water cycle continuum present in the mini-environment.

SCIENCE: Water - Grade 6
ASSIGN. SCOPE OF LESSON STATEMENT Recognize the negative results of water contamination and temperature change on aquatic life.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Observe and record the effects of contamination and temperature change on brine shrimp.	1.1 The material mentioned in the resource column will be beneficial here. Have students create environments for their brine shrimp. 1.2 Have students develop a systematic plan for changing the environment; i.e., add contaminants, raise and lower temperature, etc. 1.3 Students proceed with their experiments keeping detailed record of changes made and affects thereof. 1.4 Discuss thoroughly. 1.5 Brainstorm ideas for preventing contamination of our water.	1.1 ACCENT ON SCIENCE, Grade 6, Unit 10, Chapter 2. Available at the Science-Math Resource Center. NATIONAL GEOGRAPHIC, March 1985.	

SCIENCE: Water - Grade 6
ASSIGN. SCOPE OF LESSON STATEMENT Recognize that water plays an integral part in the process of erosion.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Read about erosion.	1.1 Use science or geography textbooks to read about erosion, flooding, glacier movement, etc.	1.1 SCOTT FORESMAN SCIENCE, Grade 6, Unit 7, pp. 300-302.	
	1.2 Discuss the involvement of water.	1.2 Film: RIVER OF SAND ESCP.	
2. Observe the process of water erosion.	2.1 Discuss local sights of water erosion.		2.1 Possibilities include: stream banks, irrigation ditch banks, defoliated hillsides (water gullies formed).
	2.2 Discuss what might happen to rock if water seeps into cracks and then freezes.		
	2.3 Have students set a cracked brick or rock in a pail of water for a school day. Then set rock or brick outside. (Be sure rock or brick will trap some water inside). Discuss what might happen when water freezes.	2.3 Cracked rock or brick, 2-5 gallon bucket.	2.3 Should be taught when nights have below freezing temperatures.
	2.4 Observe first thing in morning. Discuss results. If no further cracks developed, discuss why. (Process takes great deal of time, etc.). If cracks have increased, discuss why it happened overnight; what were the conditions? (Previously cracked, water trapped, super cold, etc.).		

SOCIAL STUDIES: Water - Grade 6
ASSIGN. SCOPE OF LESSON STATEMENT Develop an understanding of the hazards of acid rain.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Read about acid rain.	1.1 Have books available for class or individual reading and discussion.	1.1 Science textbooks, grade 6, chapters on water and weather. Acid rain books from Science-Math Resource Center. See resource list.	
	1.2 Watch acid rain film and discuss.	1.2 Acid rain filmstrip from Science-Math Resource Center.	
2. Create booklet of acid rain information to teach younger children.	2.1 Discuss information that is of the most importance. (What should everyone know about acid rain?).		
	2.2 Have students divide into groups and write their topic in a way that is appropriate for younger children. Be sure to include illustrations.	2.2 Theme and typing paper.	
	2.3 Compile into booklet.		
	2.4 Students read to younger children and lead classroom discussions.		

SOCIAL STUDIES: Water - Grade 6
ASSIGN. SCOPE OF LESSON STATEMENT Demonstrate knowledge of weather disasters and preparedness.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Read about weather disasters such as flooding and tsunamis.	1.1 Provide books and articles for students to read about weather disasters.	1.1 Science-Math Resource Center: STORMY WEATHER, ISCS, Vertical File: Weather Tsunami; Watch & Warning; Disaster Preparedness Pamphlets. SILVER BURDETT SCIENCE, Grade 6, "Storms," pp. 276-281. NATIONAL GEOGRAPHIC, "El Nino," Feb. 1984.	
2. Create a poster explaining a weather disaster and how to prepare for it.	2.1 Discuss information read, storm types and preparedness. 2.2 Have students choose a weather disaster and make a poster which explains the weather type and how to prepare for it. 2.3 Share and display.	2.2 Construction paper, magazines, scissors, crayons, markers, etc.	

SOCIAL STUDIES: Water - Grade 6

ASSIGN. SCOPE OF LESSON STATEMENT Develop an understanding of water use and abuse, conservation, clean-up, and prevention.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Research and orally present information regarding water use and abuse.	1.1 Provide books, pamphlets, articles, etc. for students to read about water problems. 1.2 Have students choose a certain topic or geographic area. 1.3 Students should research to explain the problem, explain current actions being taken, and present ideas for cleanup, and/or conservation and/or prevention. 1.4 Students present information to the rest of the class in a 3-5 minute talk.	1.1 See Science-Math Resource Center resources, encyclopedias, library references.	1.4 Oral speaking techniques may need to be reviewed prior to presentations.

ART: Water - Grade 6
ASSIGN. SCOPE OF LESSON STATEMENT Utilize outline drawings to convey a message.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Make a coloring book to teach younger children about acid rain, water conservation, and/or water pollution.	1.1 Follow lesson plans for the following except having culminating activity be the creation of a coloring book. Review outline drawings prior to activity if necessary. Lessons: Social Studies, Water Grade 6, p. 3. Social Studies, Water Grade 6, p. 1.		

ART: Water - Grade 6
ASSIGN. SCOPE OF LESSON STATEMENT Apply knowledge of pen and ink to draw replicas of various snow crystals.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Draw various snow crystals with pen and ink.	1.1 Observe snow crystals outside with hand lenses. Take sketch pad and pencil outside. Draw sketch and students "take photographs" in their minds. 1.2 Come back inside and with fine, felt tip pens (black) or india ink filled pens, and white paper, draw replicas of observed snow crystals. 1.3 Display. Critique together. (Positive, constructive criticism).	1.2 India ink filled pens or fine black felt tip pens, white paper.	1.1 Best when it is snowing.

ART: Water - Grade 6

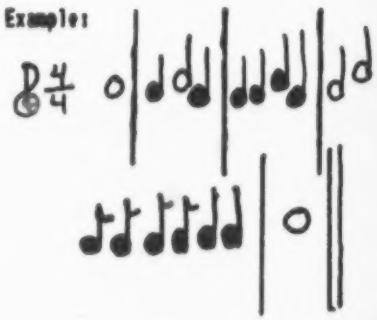
ASSIGN. SCOPE OF LESSON STATEMENT 1. Use tempra paint to create a mural.
2. Work within a group to develop and execute a plan.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Meet in small groups and plan a mural scene showing examples of activities to pursue while various forms of precipitation fall.	1.1 Discuss what we do when various forms of precipitation fall. 1.2 Tell groups that given a certain size paper (3'x10') they are to plan a mural depicting several of these activities.	1.1 Large pieces of white butcher paper, newspaper, many varied colors of tempra paint, paint brushes.	1.1 Examples: Rain: walk with umbrella, puddle hopping, reading in front of fire. Snow: skiing, sledding, sleigh rides, indoor activities. Hail storm: caught off guard outside and duck for cover, peering out a window. Sleet: bundled up, moving in a hurry.
2. Prepare work area. Assemble paints and other materials, and work as a group to complete plan.	2.1 Students work in groups. Teacher circulates offering assistance and encouragement.		
3. Clean-up, display and explain mural to other groups.	3.1 Each group is in charge of their own clean-up. 3.2 Have a spot for students to display their finished work. 3.3 Have each group explain its mural. Discuss together.		

MUSIC: Water - Grade 6
ASSIGN. SCOPE OF LESSON STATEMENT Appreciate "music" of water sounds.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Record and listen to various water sounds. Mix with music to create 3-5 min. "song."	1.1 Have students record planned segments of water sounds. Brainstorm ideas. 1.2 Discuss how to inteject favorite pieces of other music to create their own "song." 1.3 Listen to students creations and critique together.	1.1 Tape recorder, microphone.	1.1 Possible recording ideas: bubbles in water, rain falling, snow falling (in a quiet spot), rapids in a river, walking on snow, water lapping against shore.

MUSIC: Water - Grade 6
ASSIGN. SCOPE OF LESSON STATEMENT Develop an appreciation of written music.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Write and play a musical phrase to depict a specific water sound.	1.1 Discussion of water sounds is preliminary. 1.2 Review notation, (see experience chart). 1.3 Discuss how we could listen for a beat in water sounds. Have students practice writing musical phrases with correct notation. 1.4 Culminating activity: have students write and present a music phrase that depicts a water sound. Other students guess. Discuss.	1.2 Use a music textbook if additional information is necessary. 1.4 Musical theme paper, may want to use triangles, congas, etc.	1.2 Example: 

MUSIC: Water - Grade 6
ASSIGN. SCOPE OF LESSON STATEMENT Appreciate various genres of music.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Locate a song that could describe a form of water.	1.1 Discuss various water forms.	1.1 "Walking in the Rain," "Raindrops Keep Falling on My Head," "Oh What a Beautiful Morning."	1.1 Examples: Pond, ocean in a storm, calm river, windy lake, rushing stream, giant river with rapids, etc.
	1.2 Discuss how music can make us feel a certain way or think about certain things.		
	1.3 Assign students to locate and bring to class a song which they feel describes a specific water form.		
	1.4 Listen and discuss student choices.	1.4 Tape recorder and phonograph.	

HEALTH AND PHYSICAL EDUCATION: Water - Grade 6
ASSIGN. SCOPE OF LESSON STATEMENT Develop listening and questioning skills.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Listen to county health nurse present information on the importance of water to human beings.	1.1 Invite a county health nurse to speak to the class about water its importance to human beings. 1.2 Ask students to develop questions to ask of the nurse. 1.3 Presentation and question/answer time. 1.4 Wrap-up critique. (Thank you notes, tie in to Language Arts).	1.1 MSU contact person, Barbara Pincava, Nursing Department, Ex-county Health Nurse, Gallatin Cnty, Connie Staudahaur.	

HEALTH AND PHYSICAL EDUCATION: Water - Grade 6
ASSIGN. SCOPE OF LESSON STATEMENT Appreciate personal feelings.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Take a walk or jog in the snow, rain, and/or sun.	1.1 Discuss lifetime exercise habits such as walking and jogging. 1.2 Explain how sometimes certain weather patterns make it easier for us to take the first step each day. Ask what weather days would be easier. 1.3 Tie into water by explaining that many people walk or jog or run when it is precipitating. 1.4 Take a walk/jog in various types of weather, rain, snow, sun, etc. Ask students to record their feelings, thoughts, perception of differences each day. Discuss together.		1.1 Could also do a lesson here on cardio-vascular fitness, aerobic exercise, etc.

HEALTH AND PHYSICAL EDUCATION: Water - Grade 6
ASSIGN. SCOPE OF LESSON STATEMENT Appreciate various forms of water activities.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Choose a water activity and teach others "how to."	1.1 As a group list activities that depend on some form of water.		1.1 Examples: ice-fishing, water skiing, swimming, canoeing, crew, fly fishing, ice skating, wind surfing, sailing, kayaking, rafting, water polo, bait fishing.
	1.2 have students choose one they are familiar with (or are willing to research) to teach to the rest of the class. Lessons should be 5-15 minutes in length.		
	1.3 Presentations and group critiques.		

UNIT: WEATHER

Step V. Lesson Plans

Sub-Unit: Climates and Global Effects - Grade 7

READING/LANGUAGE ARTS: Climates - Grade 7
ASSIGN. SCOPE OF LESSON STATEMENT Develop an understanding of climatic changes on people.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Read and discuss magazine and newspaper articles about the effects of climatic changes on people.	1.1 Ask students to bring in newspaper and/or magazine articles having to do with the topic. 1.2 Have supply of articles, etc. on hand for students to read. Read some aloud to whole class. 1.3 Discuss lifestyles, diet and activities of people as they are effected by climates.	1.2 Example: NATIONAL GEOGRAPHIC, "El Nino", Feb. 1984, Sept. 1984.	
2. Write news articles.	2.1 Write sequal to an article from above lessons. 2.2 Get black and white photos from BOZEMAN CHRONICLE. Students write articles about photos as they relate to climatic situations.		

READING/LANGUAGE ARTS: Climates - Grade 7
ASSIGN. SCOPE OF LESSON STATEMENT Understand use of outline, summary and notetaking to organize information.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Read about varying climate regions of the world. Organize information through use of outlining, summarizing, and notetaking techniques.	1.1 Review lesson on notetaking and/or outlining by using webbing technique. Example: Roman numerals - state main ideas. Capital letters state subtopics. Numbers state details. 1.2 Have students pick a climatic region to study - outline and summarize. 1.3 Share information orally.	1.1 Geography textbook, world atlases, encyclopedias, conceptual mapping technique, webbing, Peg Nelson - Whittier.	1.1 Examples: Continental, tropical, marine, humid - subtropical, arid, etc.

READING/LANGUAGE ARTS: Climates - Grade 7
ASSIGN. SCOPE OF LESSON STATEMENT 1. Recognize the difference between fact and opinion.
2. Appreciate the use of the written word as a means of expressing an opinion.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Write an opinion essay on how climate effects personality growth of people.	1.1 Review facts and opinion. Discuss possible personality stereotypes that we associate with various climatic regions. (See experience chart). 1.2 Discuss how students could formulate their own opinion. 1.3 Assign students to write an essay stating their personal opinion about how climate effects personality growth of people. (Students may choose 1 climate region and discuss or do a survey of several climate regions). 1.4 Share orally and discuss.		1.1 Personality stereotypes in various climatic regions; i.e., a) rainy/marine climates - grey skys - wet drizzle: depressed/sullen. b) sunny - mild temp: upturned faces, smiles. c) Hot, monsoons - dry/wet: hot tempered, loud voices.

READING/LANGUAGE ARTS: Climates - Grade 7
ASSIGN. SCOPE OF LESSON STATEMENT Understand technique of pantomime.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Present pantomimes depicting life in various climtic regions. Audience guesses which region.	1.1 Teach technique of pantomime. (Acting without voice or props). 1.2 Divide class into groups. Assign a climatic region to each group. Assignment: develop and present a pantomime depicting life in your climatic region. (Time element could be assigned). 1.3 Presentations: audience guesses which climatic region.	1.1 Pantomime acting or theater arts books.	1.1 Lesson should follow studies of various climatic regions.

READING/LANGUAGE ARTS: Climates - Grade 7
ASSIGN. SCOPE OF LESSON STATEMENT Understand various poetry types.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Write haiku poems describing the weather in various climatic regions.	1.1 Review 5-7-5 syllable format for haiku. 1.2 Discuss weather patterns in each climate region. 1.3 Assignment: Write haiku poems describing the weather in various climate regions (2-4 each student). Illustrate each. 1.4 Share orally and display.	1.2 Geography textbooks and good resources.	

READING/LANGUAGE ARTS: Climates - Grade 7
ASSIGN. SCOPE OF LESSON STATEMENT Develop brainstorming technique as a group.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Brainstorm word lists for various climatic regions.	1.1 Review climatic regions and weather patterns, countries, geography, of each. 1.2 Choose several climate regions. Work as a group to brainstorm lists of words for each region. 1.3 Optional: can use word lists for various activities: stories, word attack strategies, analogies, poetry, letter writing.	1.2 Butcher paper, colored markers.	

MATH: Climates - Grade 7
ASSIGN. SCOPE OF LESSON STATEMENT Understand various numbering systems.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Convert precipitation and growing season maps to Roman numerals.	1.1 Review/teach Roman numerals. 1.2 Look at various precipitation and growing season maps. 1.3 Make "NEW" style maps where all the information is in Roman numerals.	1.1 Math textbooks. 1.2 Atlases, geography textbooks, encyclopedias.	

MATH: Climates - Grade 7
ASSIGN. SCOPE OF LESSON STATEMENT Understand graphing techniques.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Make line graph of hours of daylight.	1.1 Read newspaper section on sunrise and sunset times. 1.2 Keep records of sunrise and sunsets for 1 week (to 1 month, etc.). 1.3 Transfer information to construct a line graph.		

MATH: Climates - Grade 7
ASSIGN. SCOPE OF LESSON STATEMENT Understand scientific notation as a means of writing numbers.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Write area of each climate region in scientific notation.	1.1 Teach scientific notation as a means of writing numbers.	1.1 Mathematics textbook.	1.1 $10^0 = 1$ $10^1 = 10$ $10^2 = 100$ $10^3 = 1,000$ $10^4 = 10,000$ $10^5 = 100,000$ 1.24111×10^5
	1.2 Find land area of each climatic region.	1.2 Atlas, maps.	
	1.3 Convert land areas to scientific notation.		
	1.4 Students make posters advertising the different land areas in their "NEW" numbers.		

SCIENCE: Climates - Grade 7
ASSIGN. SCOPE OF LESSON STATEMENT Appreciate the plight of various endangered species.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Research endangered animals from various climatic regions.	1.1 Watch film - pre/post discussions. 1.2 Have materials on hand from various organizations, libraries, etc., for students to study. 1.3 Students can write letters, present information to class orally, in poster format, or a mobile. Make sure climate information is included (habitat of animal).	1.1 National Geographic filmstrip "Endangered Species," Science-Math Resource Center. National Wildlife Federation. Sierra Club.	1.1 Write to Sierra Club and National Wildlife Federation prior to teaching this lesson.

SCIENCE: Climates - Grade 7
ASSIGN. SCOPE OF LESSON STATEMENT Develop an understanding of how plants are suited to specific climate regions.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Artificially change the climate of a plant. Hypothesize, observe, and summarize recorded results.	1.1 Discuss how plants need specific temperature ranges, amounts of moisture, and sunlight. 1.2 Students bring in small living plants. (Not favorite house plant). Discuss climate needs of various plants. Make "My Needs" card to go with each plant. Have students develop ways to alter their climates. Write a hypothesis. As climate is altered take daily observation notes on chart or in a journal shaped like the plant (or a plant pot). 1.3 Summarize recorded results at end of project (probably 1-2 weeks). Share and display.		

SCIENCE: Climates - Grade 7
ASSIGN. SCOPE OF LESSON STATEMENT Recognize various career opportunities.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Investigate various career options in the climates field.	1.1 Watch film. 1.2 Have students research, interview and present information on climate careers that interest them. Variation: Have students choose career that is specific to a certain climate region. Example: Banana farming in tropical climates.	1.1 SEARCH FOR SOLUTIONS, Science-Math Resource Center. "Modeling," 3 minutes on developing maps and predicting typhoons.	

SOCIAL STUDIES: Climates - Grade 7
ASSIGN. SCOPE OF LESSON STATEMENT Comprehend the integrated components within a climate region.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Develop a travel brochure.	1.1 Study a specific climatic region. Take notes on geographical features, cities, countries included in that region. 1.2 Review travel brochures of different countries and areas of your climate regions. Observe layout and content. 1.3 Develop a brochure on the "climate region," chosen. Brochure should include a variety of pictures illustrating the climate region. Display in the classroom.	1.1 Textbook. PEOPLE ON EARTH - A WORLD GEOGRAPHY, Teachers' Resource Center. Encyclopedias. 1.2 Travel brochures can be obtained from local travel agencies; i.e., Montana Travel.	

SOCIAL STUDIES: Climates - Grade 7
ASSIGN. SCOPE OF LESSON STATEMENT Create an imaginary country with climate as the first consideration.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Create an imaginary country with its climate region as the first consideration.	1.1 Review the components that make up the 14 major climates.	1.1 Geography text; i.e., PEOPLE ON EARTH - A WORLD GEOGRAPHY, Scott Foresman, Teachers' Resource Center.	1.1 Rainforest, savanna, desert, steppe marine west coast, humid subtropical Mediterranean, warm summer, cool summer, subartic, tundra, ice cap, highlands, uplands. (Tropical climates, dry climates, mild climates, continental climates, polar climates, high altitudes). This lesson will take at least 3 days to complete.
	1.2 Each student will choose a climate region that interests him/her. Students will develop an imaginary country based on its climate region.		
	1.3 The country can be developed as follows.		
	1.4 Name the country and depict its geography on a map. Geography should illustrate geographical features found in that articular region.	1.4 White construction paper, colored pencils.	
	1.5 Draw a cross section of an area of the country. The cross section should be developed with an ecosystem in mind. Students will present orally to the class.	1.5 White paper, drawing utensils, (crayon, pencils, etc.).	
	1.6 Illustrate a human inhabitant of your country, depicting clothing they might wear related to its climate. All of the above can be imaginary - the more creative the better. All should accurately relate to the country's climate region. Above can be drawn or done in the form of a paperdoll.	1.6 White construction paper, markers, crayons, etc.	

SOCIAL STUDIES: Climates - Grade 7
ASSIGN. SCOPE OF LESSON STATEMENT Recognize the relationship between climate and lifestyles.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Identify effects of climate on lifestyles.	1.1 Each student chooses a country they are interested in. Students will identify the climate region the country is located in. Research that country focusing on the lifestyles of the people living in that country and the effects climate has on those lifestyles; i.e., clothing, diet, recreation, occupations, transportation. 1.2 Students choose how they want to display their findings, reports, posters, play format, etc. Findings are presented to the class.	1.1 Encyclopedias, resource books on countries, geography textbooks.	

ART: Climates - Grade 7
ASSIGN. SCOPE OF LESSON STATEMENT Demonstrate understanding of climate regions.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Create a collage depicting several climate regions.	1.1 Review climate regions of a particular region of the world. Discuss weather, dress, occupations associated with the regions. 1.2 Cut pictures from magazines and develop a collage contrasting different climate regions work in small groups. 1.3 Display collages. Have students try to pick out the different climate regions other groups have displayed in their collages.	1.2 Posterboard, glue, scissors, magazines (NATIONAL GEOGRAPHIC).	

ART: Climates - Grade 7
ASSIGN. SCOPE OF LESSON STATEMENT Interpret adverse affects of climate regions.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Draw a political cartoon.	1.1 Discuss a climate region whose current weather condition is causing adverse affects on its inhabitants, i.e., Ethiopia. 1.2 Challenge students to draw a political cartoon depiciting the plight of the people, cause of weather conditions, or what might happen in the future. 1.3 Display on a bulletin board entitled, "Comments."	1.2 White paper, pencils, examples of political cartoons.	

ART: Climates - Grade 7
ASSIGN. SCOPE OF LESSON STATEMENT Understand vocabulary associated with climate.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Create an abstract art form.	1.1 Brainstorm words associated with different climate regions and explore synonyms for these words; i.e., wet-soggy. Put words on the board. 1.2 Students will create a painting in abstract form depicting a word associated with climate. Students should sign and title painting. 1.3 Display around the room.	1.2 White construction paper or water color paper, water colors, brushes.	

MUSIC: Climates - Grade 7
ASSIGN. SCOPE OF LESSON STATEMENT Appreciate music from several regions of the world.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Listen to music from different climate regions.	1.1 Discuss a region of the world that has several climate regions and involves several countries. 1.2 Listen to music from countries of that region. After listening to a piece, have students decide what country the music is from. Discuss the feeling the music portrays. Compare music from different countries, rhythm, instruments used, mood, etc.	1.2 Records of songs from region discussed can be obtained from public library or MSU library.	

MUSIC: Climates - Grade 7
ASSIGN. SCOPE OF LESSON STATEMENT Understand the effects climate has on a population.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Create lyrics and a melody.	1.1 Divide the students into small groups. Each group will choose a climate region to write a song about. The lyrics should be about the climate of that region and the effects the climate has on the population of that area.	1.1 Paper, pencil.	1.1 This lesson will take at least 2 periods.
	1.2 After the lyrics are written students will develop a melody for their lyrics. Rhythm instruments can be used or instruments played by a student. If a student knows notation, he/she could be challenged to write up the melody.	1.2 Rhythm instruments, recorders, music staff, paper.	
	1.3 Record the students songs and play back.	1.3 Tape recorder, cassette tape.	

HEALTH AND PHYSICAL EDUCATION: Climates - Grade 7
ASSIGN. SCOPE OF LESSON STATEMENT Understand the process used for adaption.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Adapt games/sports specific to one climatic region so it can be played in another climatic region.	1.1 Choose a sport indicative of a climate region; i.e., skiing, skuba diving. 1.2 Divide students into small groups. The groups are challenged to take the sport chosen by the class and adapt it for a climate region whose climate makes it impossible for the sport to be played. 1.3 Groups present sports to rest of class. If possible, the class should try each adapted sport.		

HEALTH AND PHYSICAL EDUCATION: Climates - Grade 7
ASSIGN. SCOPE OF LESSON STATEMENT Know safety methods used for different climate related disasters.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Describe techniques used to prepare for a climate related disaster.	1.1 Brainstorm weather patterns associated with climate regions. List on the board.		1.1 Typhoons, hurricanes, floods, tornadoes, tidal waves. Students would write to the National Weather Service for information on weather watches.
	1.2 In small groups, investigate the methods used to prepare for the disaster. Each group will prepare a write up and diagrams on their technique on uniform size. Paper to be compiled into a Disaster Prevention booklet.	1.2 Encyclopedias.	
	1.3 Students will demonstrate the methods used for safety during a storm that they researched.		

HEALTH AND PHYSICAL EDUCATION: Climates - Grade 7
ASSIGN. SCOPE OF LESSON STATEMENT Perform an original dance.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Create a dance to bring on a particular weather pattern.	1.1 Research cultures that used dances for religion and nature and discuss. Examine costumes or dress associated with each dance. If possible have a resource person demonstrate the dance. 1.2 Divide students into small groups. Assign a weather condition to each group. Groups create a dance for that weather condition and design a costume for the dance. 1.3 Groups present their dance to the rest of the class, in costume if possible.	1.1 Encyclopedias, books relating to Indian or African cultures.	

UNIT: WEATHER

Step V. Lesson Plans

Sub-Unit: Occupations - Grade 8

LANGUAGE ARTS: Occupations - Grade 8
ASSIGN. SCOPE OF LESSON STATEMENT Comprehend elements of weather and weather patterns.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Read textbook material on weather patterns and meteorology.	1.1 Introduce meteorology and define.	1.1 Greek - study of meteor phenomenon.	1.1 This portion of the unit would most likely take a week to complete.
	1.2 Make a list of questions students may have on subject and chart.	1.2 Chart paper, markers.	
	1.3 Assign reading materials.	1.3 Textbook, PATHWAYS IN SCIENCE, Globe Book Co., Joseph M. Oxenhorn.	
	1.4 Students read material, taking notes on reading.	1.4 Science notebook.	
	1.5 Discuss reading highlighting main ideas in students' notes.	1.5 Highlighters.	
2. Define weather elements.	2.1 Chart weather elements, air pressure, air temperature, relative humidity, wind velocity, wind direction, precipitation, appearance of sky.		

READING/LANGUAGE ARTS: Occupations - Grade 8
ASSIGN. SCOPE OF LESSON STATEMENT Read, observe and write weather reports.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Watch and listen to weather reports on television.	1.1 Students will watch weather reports for a week on television. 1.2 Take notes on what aspects of weather is being reported. 1.3 Record temperature, humidity, precipitation, reported locally and predictions.	1.2 Science notebook.	
2. Read weather reports and predictions.	2.1 Students will read and save weather reports from local newspaper for a week. Keep in science notebook.	2.1 Newspapers, notebook.	
3. Write weather reports.	3.1 Students observe weather for a day - obtain temperatures, humidity and precipitation reading from airport. 3.2 Prepare a written weather report to be given orally.		3.1 Refer to Reading/Language Arts, p. 3, Objective 1.

READING/LANGUAGE ARTS: Occupations - Grade 8
ASSIGN. SCOPE OF LESSON STATEMENT Present an oral weather report.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Present an oral weather report.	1.1 Make a television screen out of posterboard. 1.2 Using weather report previously written, present orally to class in the manner that a weather man would. Videotape their presentations. 1.3 Have video taped weather reports from a local and national station. View the forecasts and discuss.	1.1 Posterboard. 1.2 Written weather reports. Television, video recording equipment, video tape. 1.3 Video taped weather forecasts television.	1.1 Refer to Reading/Language Arts, p. 2, Objective 3, Weather.

READING/LANGUAGE ARTS: Occupations - Grade 8
ASSIGN. SCOPE OF LESSON STATEMENT Generate vocabulary list and define.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Generate and define vocabulary associated with meteorology.	1.1 Brainstorm list of words associated with meteorology. 1.2 Chart list and place on bulletin board. 1.3 On index cards, define vocabulary words and use in a sentence. Also identify part of speech. File in science word bank. 1.4 Challenge students to find origin of words and determine meanings by word roots, prefixes, suffixes, (structural analysis). 1.5 Write analogies using vocabulary lists.	1.2 Chart marker. 1.3 Index cards, word bank for science.	

READING/LANGUAGE ARTS: Occupations - Grade 8
ASSIGN. SCOPE OF LESSON STATEMENT Recognize occupations affectd by weather.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. List occupations affected by weather.	1.1 Brainstorm occupations that may be affected by weather - list in science notebook.	1.1 Science notebook, pencil.	
2. Describe how weather affects various occupations.	2.1 Next to each occupation, each student will describe how weather may affect each occupation listed. 2.2 Discuss, as a class, their descriptions. Students may add to their notebooks, any effects they didn't think of. 2.3 Divide class into groups. Assign an occupation to each group. Groups will display effects of weather on their occupation on a bulletin board.	2.1 Science notebook. 2.3 Bulletin board space.	

READING/LANGUAGE ARTS: Occupations - Grade 8
ASSIGN. SCOPE OF LESSON STATEMENT Provide opportunity for students to listen to and respond to a guest speaker.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Develop questions for guest speakers.	1.1 Students will generate a list of questions they have for guest speaker - meteorologist.	1.1 Pencil, paper.	
2. Listen and respond to a guest speaker.	2.1 Invite meteorologist to speak to class. 2.2 Students will listen to guest speaker.	2.1 Meteorologist, Montana State.	
3. Ask questions pertaining to meteorology.	3.1 Provide an opportunity at end of presentation for a question and answer period. 3.2 Have students present questions prepared above and answers to the rest of the class after presentation is over.		

READING/LANGUAGE ARTS: Occupations - Grade 8
ASSIGN. SCOPE OF LESSON STATEMENT Develop a panel discussion.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Listen to and participate in a panel discussion.	1.1 Have students think of people they know whose occupation is affected by weather.		
	1.2 Invite above persons to come to class to discuss their occupations and the effects of weather to the class in the form of a panel.	1.2 Resource people students generate.	
	1.3 Students will listen to panel and take notes.		
	1.4 Compare notes with list compiled previously on occupations. Discuss.		1.4 Refer to Reading/Language Arts, p. 5, Objective 2, Weather.

READING/LANGUAGE ARTS: Occupations - Grade 8
ASSIGN. SCOPE OF LESSON STATEMENT Provide experience for written creative expression.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Recognize the rhythm used in reading and writing a limerick.	1.1 Read to the class a variety of limericks. 1.2 Discuss the rhythm in limericks. 1.3 Have students read aloud limericks.	1.1 Variety of limericks.	
2. Write a limerick.	2.1 Brainstorm topics relating to occupations relating to weather that students could write about. 2.2 Students write limericks. Have students illustrate their poems and read aloud to the class if they choose to.		

MATH: Occupations - Grade 8
ASSIGN. SCOPE OF LESSON STATEMENT Write and compute story problems relating to weather occupations.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Develop story problems.	1.1 Students will write story problems using weather and occupations. Choose concepts and operations to be used when solving the problems, i.e., 1) graphing; 2) percentages; 3) decimals.	1.1 Paper, pencils.	
	1.2 Compile story problems into a booklet.	1.2 Cover for booklet.	
2. Solve story problems.	2.1 Place booklet in a weather station. Students will solve problems on a separate sheet of paper. Discuss answers.		
	2.2 Discuss any problems that may have arisen in trying to solve the problems; i.e., wording, not enough information.		

MATH: Occupations - Grade 8
ASSIGN. SCOPE OF LESSON STATEMENT Use graphing skills to present data.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Graph average temperature readings on a bar graph.	1.1 Students will gather average monthly temperature readings for an area of their choice for the year of 1984.	1.1 1984 World Almanac.	
	1.2 Review bar graphs and its components.	1.2 Plain paper, rulers, pencils, markers.	
	1.3 Students display data using a bar graph.		
2. Graph average temperatures using a line graph.	2.1 Obtain average monthly temperature readings for a specific area for 3 consecutive years.		
	2.2 Review line graphs.		
	2.3 Display above data on a line graph. Should include a key.	2.3 Graph paper, pencils, colored pencils.	2.3 Refer to Math, Grade 8, p. 3, Objective 1, Weather.

MATH: Occupations - Grade 8
ASSIGN. SCOPE OF LESSON STATEMENT Interpret data for predictions of average temperatures.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Make predictions of average temperatures.	1.1 Using data obtained from graphing activity, average temperatures of 5 years to predict future temperatures for each month.	1.1 Data and line graph.	1.1 Refer to Weather: Math, Grade 8, p. 2, Objective 2.
	1.2 Display predictions on a chart for bulletin board. Include a) area; b) months; c) temperature.	1.2 White construction paper, pens.	

SCIENCE: Occupations - Grade 8
ASSIGN. SCOPE OF LESSON STATEMENT Develop a weather station.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Set up a weather station in order to measure and predict.	1.1 Students will obtain thermometers, barometer, rain gauge, and weather vane or wind sock.	1.1 Barometer, 2 thermometers, wind sock, rain guage.	
	1.2 Set instruments in appropriate areas; i.e., thermometer in shade and sun, weather vane or wind sock in open area.		
	1.3 Students set up an weather observation notebook. Assign students to observe and record weather conditions at certain periods of the day. Also should record and illustrate cloud formations.	1.3 Notebook, daily observation charts.	1.3 Should observe and record over a long period of time. Refer to Weather, Science, Grade 8, p. 2.

SCIENCE: Occupations - Grade 8
ASSIGN. SCOPE OF LESSON STATEMENT Forecast weather conditions.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Predict weather patterns and conditions.	1.1 Observe weather conditions for at least 2 weeks using weather station. Record findings. Study the observations. 1.2 Observe and record weather for 3 days. Using this information, predict the weather for the next day and make a long range forecast for the next 3 days. Write up forecast and make illustration of forecast for a newspaper. 1.3 Compare actual weather conditions to forecast made. Analyze any discrepancies.	1.1 Recording of observations using weather station. 1.2 Paper, pencil.	1.1 Observations will take at least 4 days.

SCIENCE: Occupations - Grade 8
ASSIGN. SCOPE OF LESSON STATEMENT 1. Interpret information on a weather station model.
2. Illustrate a weather station model.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Identify coded information on a weather station model.	1.1 Review weather station models and how they are used by the weather service to make synoptic maps. Give each student a copy of code symbols used and an example of a weather station model. Have prepared questions for students to answer using the sample weather station model.	1.1 Symbols and weather station model can be found in EARTH SCIENCE, Lab Inquiry Text, Cambridge Book Co., pp. 187-188, Science-Math Resource Center.	1.1 WINDS AND WEATHER, ISCS.
2. Construct a weather station model.	2.1 Students are given a blank weather station model. Teacher has prepared weather conditions that students will illustrate on the model.	2.1 Resources from p. 1 and blank weather station model, pencil.	

SOCIAL STUDIES: Occupations - Grade 8
ASSIGN. SCOPE OF LESSON STATEMENT Provide an opportunity for students to interview and analyze results.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Interview people representing various occupations.	1.1 Class develops a questionnaire to find out effects of weather on different occupations. Discuss how the results will be displayed and analyzed. 1.2 Students will administer survey. 1.3 Discuss results of survey. 1.4 Display results of survey on a bulletin board.	1.1 Ditto paper, copies of survey.	

SOCIAL STUDIES: Occupations - Grade 8
ASSIGN. SCOPE OF LESSON STATEMENT Interpret weather data.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Identify weather patterns and conditions on a simplified weather map.	1.1 Distribute a sample National Weather Service map and key. Have students develop questions about the map and write them down on a piece of paper. 1.2 Compile questions into one set of questions. Divide class into groups to answer the questions. Regroup to discuss answers and any questions they may have about the map. 1.3 Check the newspaper for a local weather map and identify the symbols and weather systems.	1.1 EARTH SCIENCE Lab Inquiry Text, Cambridge Book Co., p. 189. Maps obtained from FAA, upstairs in the old airport.	

SOCIAL STUDIES: Occupations - Grade 8
ASSIGN. SCOPE OF LESSON STATEMENT Map weather patterns.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Map weather conditions in the continental United States.	1.1 Have students watch the weather report the night before lesson. Students will take notes on weather conditions; i.e., high/low pressures, temperature fronts, weather conditions. Can also clip weather report from newspaper.	1.1 Weather report on television, student generated notes.	
	1.2 Review symbols for mapping weather conditions.	1.2 PATHWAYS IN SCIENCE, Globe Book Co., p. 181.	
	1.3 On a map of the United States map the conditions seen on weather report.	1.3 Map of the U.S., pencils, pens.	
	1.4 Display maps on bulletin board.		

SOCIAL STUDIES: Occupations - Grade 8
ASSIGN. SCOPE OF LESSON STATEMENT Research and report on weather patterns indicative of a specific locality.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Research an area of the world.	1.1 Discuss weather patterns not found in Montana. List on the board; i.e., hurricanes, tornadoes, monsoons, areas of heavy rain, rain forests, arid areas, drought.		
	1.2 Students choose a country or area in the world that interests them and researches the climate and weather patterns, occupations and lifestyles.	1.2 Reference books on countries, encyclopedias.	
	1.3 Report on their findings a brochure format. Should include weather conditions, lifestyles, occupations, effects of weather. Illustrations should be included to illustrate the above. Should include precautions or safety measures to be taken during the weather conditions.	1.3 Construction paper, markers, magazines, glue.	

SOCIAL STUDIES: Occupations - Grade 8
ASSIGN. SCOPE OF LESSON STATEMENT Predict and analyze the effect of weather.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Predict the effects of weather with respect to various occupations.	1.1 Brainstorm a list of occupations. List them on the chalkboard. Have each student choose an occupation to be used for the lesson. 1.2 Introduce a hypothetical situation where a major storm or weather change has occured; e.g., two feet of snow overnight. Students will predict the effects the weather condition will have on a person with that occupation and list on a sheet of paper. Can also do this using an area with a mild climate and introduce a freak weather condition; e.g., Phoenix - 2 feet of snow.		

ART: Occupations - Grade 8
ASSIGN. SCOPE OF LESSON STATEMENT Create pictures of weather patterns.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Photograph different weather patterns.	1.1 Over a period of time students will take black and white photographs of different weather patterns; e.g., rain, snow, wind, hail, sunshine, etc.	1.1 Camera, black and white film.	1.1 This will take an indefinite period of time, depending on the weather. You can also use photos found in a magazine.
	1.2 After several patterns have been photographed and film is developed, students will draw the weather pattern using charcoal. Shading will be used to display depth and dimension.	1.2 Charcoal drawing sticks, drawing paper, developed photos.	

ART: Occupations - Grade 8
ASSIGN. SCOPE OF LESSON STATEMENT Create a relationship between man and weather.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Illustrate the relationship between man and weather.	1.1 Discuss the relationship between man and weather and the effects weather has on man.		
	1.2 Observe examples of cubism and discuss the style of painting. Picasso can be used as an example.	1.2 Art department - MSU, slides/prints on file at MSU library, encyclopedia.	
	1.3 Using pastels, students will illustrate the relationship between man and weather in the style of cubism. A rough draft just using lines is often helpful in working out the design.	1.3 Pastels, drawing paper.	

MUSIC: Occupations - Grade 8
ASSIGN. SCOPE OF LESSON STATEMENT Provide experience for creative expression using music.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Create lyrics to a familiar melody.	1.1 Review how weather can affect people's occupations.		
	1.2 In small groups, have students write lyrics to a familiar melody about a job and the problems weather can create. Lyrics can be funny or serious.	1.2 Records, tapes, paper, pencil.	
	1.3 Students will record their songs on a blank tape.	1.3 Blank tape, tape recorder.	

HEALTH AND PHYSCIAL EDUCATION: Occupations - Grade 8
ASSIGN. SCOPE OF LESSON STATEMENT Modify sports/games that would be affected by weather.

OBJECTIVE	ACTIVITIES	RESOURCE MATERIALS	EXPERIENCE CHART
1. Adapt games/sports so they can be played in any weather.	1.1 Identify games/sports that would be affected by weather. List occupations associated with those sports. 1.2 Divide class into groups, assigning a sport to each group. Introduce a weather condition that would hinder the playing of the sport. 1.3 Students will adapt the game so it can be played; e.g., play indoors, change boundaries; modify rules. 1.4 Play games created by students.		

VOCABULARY KEY

Word Attack Strategy:

1. Phonics
2. Structural analysis
3. Experiential
4. Explanation related to experience
5. Sight word - exception
6. Acronym
7. Etymology
8. Homograph
9. Compound word

Level of Learning:

*	Known by teacher
**	Introduced to student
***	Reinforced or reintroduced
****	Mastered

Phonic Generalizations: (+ = In one syllable words or accented syllables...)

1a. +, if a word ends in a final "e" preceeded by a single consonant, the first vowel is usually long and the "e" silent.

Example: v c e

1b. +, a vowel in the final position is usually long.

Example: (c) v

1c. +, a vowel in the initial or medial position is usually short.

Example: (c) v c

1d. +, a vowel followed by an "r" is neither long nor short but "r" controlled.

Example: v r

1e. +, if two vowels are adjacent, the first is usually long, the second silent.

Example: (c) v v (c)

1f. +, an "i" followed by "gh" is usually long and the "gh" silent.

1g. +, when "o" is followed by "ld" the "o" is usually long.

1h. +, pronunciation of some words can only be determined through context.

1i. syllabic (c) v/c

1j. syllabic v c/c v

1k. vowel in an unaccented syllable usually has the schwa sound.

UNIT: WEATHER

Step VI. Vocabulary

SEASONS - GRADES K-1

add	1c**, 3**
autumn	5, 4**, 1k*
cloud	5, 4**
cold	1g**, 3**
collect	5**, 2* coll - (glue together)
dirt	1d**, 3**
ears	5**, 3**
eyes	5**, 3**
flower	5, 3**
fly	1b** (?)
food	5**, 3**
greater	5**, 3**
grow	1e**, 3
hear	5**, 3**
hibernate	1b*, 1i*, 1d*, 1a*, 2* hiber - (winter)
hot	1c**, 3**
kite	1a**, 3**
lamb	1c**
leaves	1e**, 2** -s - (plural morpheme)
less	1c**, 2** -less - (lack of, without)
lion	5, 4**
nose	1a**, 3**
plant	1c**
rain	1e**, 3-4
seasons	1e*, 1i*, 1k*, 4, 2** -s - (plural morpheme - inflectional ending)
seed	1e**
smell	1c**, 3**
snow	1e**, 4
soil	5, 4**
spring	1c**
subtract	1j*, 1c*, 2* sub - (under, below), tract - (drawn)
sun	1c**, 3**
taste	5**, 3**
tongue	5**, 3**
water	5, 3**
wind	1c**, 4, 1h
winter	1j*, 1c*

UNIT: WEATHER

Step VI. Vocabulary

EFFECTS OF WEATHER ON US - GRADE 2

centimeter	2**, centi - (hundred), meter - (measure)
clouds	5***, 3***
condensation	2*, 5** con - together (with, thoroughly), dens - (dense or thick), ation - (the state of)
degree	5**, 4**
evaporation	1i**, 1b, 1c**
forecast	2*, 4**, fore - (before), cast - (reckon - tell)
gauge	5**, 4**
hibernate	1b**, 1i**, 1d**, 2a*, hiber - (winter)
migrate	7*, 2*, 4**, migr - (wander)
precipitation	5**, 4**
season	1e**, 1j**, 1k**
temperature	2*, 1j**, 1c**, 1d**, temp - (moderate)
thermometer	2**, thermo - (heat), meter - (measure)

UNIT: WEATHER

Step VI. Vocabulary

PRECIPITATION - GRADE 3

circle
cold
diameter
estimate
evaporation
funnel
guage
hail
hexagon
inches
increments
instrument
measure
milli-liters
moisture
pentagon
precipitation
radius
rain
ratio
rectangle
river
sleet
snow
square
vapor
weather

UNIT: WEATHER

Step VI. Vocabulary

WEATHER RECORDING/FORECASTING - GRADE 5

anemometer

barometer

cold front

condensation

decimal

dew

dew point

evaporation

hexagon

high pressure

humidity

hygrometer

low pressure

meteorologist

meteorology

nephoscope (used to observe direction & speed of clouds)

precipitation

rain guage

saturate

thermometer

vapor

warm front

wind vane

UNIT: WEATHER

Step VI. Vocabulary

WATER - GRADE 6

angle

conservation

contamination

crystal

cubic

density

displacement

erosion

estimate

hydrogen

mean

oxygen

pollution

precipitation

ratio

region

terrarium

tsunamis

volume

UNIT: WEATHER

Step VI. Vocabulary

CLIMATES AND GLOBAL EFFECTS - GRADE 7

altitude

barometer

barometric pressure

climate

continental climate

humidity

latitude

leeward

longitude

maritime climate

polar easterlies

precipitation

predict

rainforest

relative humidity

savanna

steppe

trade winds

westerlies

windward

UNIT: WEATHER

Step VI. Vocabulary

OCCUPATIONS - GRADE 8

air front

air mass

anemometer

barometer

barometric pressure

hair hygrometer

humidity

integers

limerick

mean

median

meteorology

millibars

mode

precipitation

synoptic weather map

temperature

wind velocity

UNIT: WEATHER

Step VII. Resources

Resource List: Precipitation - Grade 3

MONTANA WEATHER, published by Montana Magazine
THE QUESTION AND ANSWER BOOK - WORLD OF WEATHER, Odler, David. Troll Associates.
YOUNG SCIENTISTS EXPLORE THE WEATHER, DeBruin, Jerry. Good Apple.
SNOW FLAKE, Galico, Paul.
SNOWMAN, Montgomery, Rutheford.
THE SNOWY DAY, Keats, Eyra Jack.
SNOW TREASURE, McSwigan, Marie.
SNOWBOUND MYSTERY, Worner, Gertrude Chandler.
THE SNOWMAN, Erskine, Jim.
SNOW IS FALLING, Branley, Franklin M.
A WALK IN THE SNOW, Busch, Phyllis S.
SNOW BUNNY, Katy, Bobbi.
SNOW DOG, Kjelgaard, Jim.
THE SNOW QUEEN, Andersen, Hans Christian.
SNOW SLOPES, Thompson, Mary Wolfe.
SNOW SURVEYS, Colby, C.B.
SNOW TRACKS, George, Jean.
RAIN, Kalan, Robert.
CLOUDS & RAIN & RAINFALL, Ariane.
RAIN AND SHINE, Witty, Paul.
RAIN CLOUD, THE WILD MUSTAND, Kraenzel, Margaret.
RAIN DROP SPLASH, Tresselt, Alvin.
THE RAIN FOREST, Sperry, Armstrong.
RAIN, RAIN DON'T GO AWAY, Morgan, Shirley.
RAINBOW IN THE SKY, Sharp, Adda Mai.
A RAINBOW OF MY OWN, Freeman, Don.
RAINBOWS AND JELLY BEANS, Xerians.
HOW TO SOLVE MATH PROBLEMS, workbook published by Weekly Reader.
ELEMENTARY SCIENCE: LEARNING BY INVESTIGATING, Brewer, Garland and Edwards. Rand McNally.
NATIONAL GEOGRAPHIC, "How Menacing is Acid Rain?", La Bastille, Anne. Nov. 1981, p. 652.
LITTLE HOUSE ON THE PRAIRE.
ACID RAIN, Gay, Kathlyn.
RAIN SHADOW, Newton, James R.
KEEPING WARM, KEEPING COOL, Rohn, Joan Elma.

UNIT: WEATHER

Step VII. Resources

Resource List: Precipitation - Grade 3 continued

NATIONAL GEOGRAPHIC, "Monsoons: Life Breath of Half the World.", Vol. 166, No. 6, Dec. 84.

"Rain Forests: Nature's Dwindling Treasures and the Teaming Life of a Rain Forest," Vol. 163, No. 1, Jan. 1983.
"Sudan: Arab-African Giant." p. 346, March 1982.
"Somalia's Hour of Needs." p. 748, June 1981.
"Saudia Arabia: The Kingdom and It's Power." p. 286, Sept. 1980.
"Roadrunner: Clown of the Desert." p. 694, May 1983.
"El Nino: Global Weather Disaster," p. 144, Feb. 1984.
"Eqypt's Disert of Promise." p. 190, Feb. 1982.
"Namibia: Nearly a Nation?" p. 755, June 1982.

Sid Fleischman's Stories.

Science-Math Resource Center

RAIN, RAIN, GO AWAY - A COLORING BOOK ON ACID RAIN.
ACID RAIN, filmstrip.

Encyclopedias.

UNIT: WEATHER

Step VII. Resources

Science-Math Resource Center:

Paul Markovitz - MSU, Elementary Education Department
- Project Wild
- Minnesota Environmental Education Project
- OBIS
- Project Learning Tree
- ESSENCE, Addison Wesley

Search for Solutions films.

ACID RAIN, filmstrip, produced by a group that is organized to fight acid rain.

WEATHER, ELECTRICITY, ENVIRONMENTAL INVESTIGATIONS, Learning Works Enrichment Series, L W902.

"Wind and Weather," ISCS

"Stormy Weather," ISCS

POLLUTION AND HEALTH, Scott Foresman	418.11 SF/4-6 1973
WATER POLLUTION, Addison Wesley	424.56 AW/7-9 1971t

RAIN, RAIN GO AWAY, coloring book on acid rain, Etherington, Kim.

	414.51 PFGL/1-2 1979

CLEAN WATER FOR THE 1970'S, U.S. Dept. of Interior

	434.56 USI/1970
WATER QUALITY, Addison Wesley	434.86 AW/10-12 1975
EROSION, Bishop, Lewis, Sutherland	421.12 MR/7-9 1976t
ACID RAIN, Schneck	434.5 TASA 1981

UNIT: WEATHER

Step VII. Resources continued

WEATHER AND CLIMATE, Pierce	421.12 HRW/7-9 1976
GEO-CYCLES, Silver Burdett	421.12 SB/7-9 1974
FOR CRYING OUT CLOUD, A STUDY OF ACID RAIN, Coyne	434.51 TASA 1981
WATER, WATER EVERYWHERE BUT...Jacobson	434.56 HA/10-12 1982

Vertical Files: Climate (ditto)
Weather (Tsunami watch and warning - disaster preparedness)
Pollution (Needed: Clean Water; Fish are for Fun, Food & Future).

Institute for Environmental Education
Curriculum Activities Guide
Vol. 1, 2, 3. Water Pollution and Equipment

ACCENT ON SCIENCE, Merrill, pp. 346-353.

WEATHER, Transparancies, water cycle, Milliken Publishinc Company.

Scott Foresman Series, weather units.

"The Weather," (Water Cycle Crossword), Good Apple CA 456 (intermediate).

METEOROLOGY - Montana Earth Science Series, Dawson, Paul.
MONTANA WEATHER, Cunninghma, Carolyn. Montana Magazine, Inc., Helena, MT.
WEATHER FORECASTING AS A HOBBY, Wells, Robert. C.S. Hammond and Company.
WEATHER EXPERIMENTS, Podendorf, Illa. Children's Press, Chicago.
WEATHER - HOW AND WHY BOOK, Bonsall, George.
THE WAY OF THE WEATHER, Spar, Jerome.
EVERYDAY WEATHER AND HOW IT WORKS, Schneider, Herman.
MAN AND WEATHER SATELLITES, Walt Disney.

UNIT: WEATHER

Step VII. Resources continued

Willson Middle School Film Library:

WEATHER, ELECTRICITY, AND ENVIRONMENTAL INVESTIGATION, Learning Works Enrichment Series, Learning Work.
THE WEATHER, Good Apple.
"A.M. Weather for Teachers," Geer, Ira W. National School Weather Project.
THE WORLD OF WEATHER, Troll Associates.
DEFINING, OBSERVING AND RECORDING WEATHER, Science-Math Resource Center.

FAA - Belgrade Airport

AERESPACE PROJECTS FOR YOUNG CHILDREN, Caballero, Jane.

Lynne Kotto, Eagle Flight, 388-6111, pilot, airport tours, flight school.

U.S. Dept. of Commerce - Cloud Chart, (Owlie Skywarn's Weather Book).

"Young Scientists Explore Seasons"
Book 5, Primary Level
Good Apple
Box 299, Carthage, IL 62321-0299

BOZEMAN DAILY CHRONICLE

FARMERS' ALMANAC

John Amend
Land Management Simulation Computer Program
Science-Math Resource Center
County extension will come out to class with computer.

UNIT: WEATHER

Step VIII. Evaluation

The following outlines a suggested formal evaluation format to utilize when teaching with this unit.

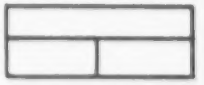
The blank form is intended to be reproduced for multiple use. The completed form is a sample of how to use the blank form.

EVALUATION WORKSHEET

Unit: Gallatin History - Past to Present

Sub-unit: Wildlife K-1

Core Area: Math/Science

Instructional Objectives	**Student's Name:** Jon H. 1 2 3	Anne H. 1 2 3	Kristin L. 1 2 3	Ray S. 1 2 3	Susan T. 1 2 3	**TEACHER NOTES**
Create verbal addition and subtraction problems.	2	2	3	1	2	Used mat organizer 
Develop counting skills using manipulatives.	3	3	3	2	3	Used plastic anima then chips.
Construct a bar graph.	2	2	2	2	3	Only 2 variables begin w/concrete graph. Expand nex time to pictorial.
Explore animal tracks.	2	2	2	2	2	Walking fieldtrip plus pets.
Categorize animals according to various characteristics.	2	1	2	1	2	Suggest extended work w/classifying attribute blocks for 1's.
Discuss idea that nature furnishes shelter for animals.	3	2	2	2	3	Pictures of animal and their shelters really helped.

1. **Does not demonstrate competence**
2. **Demonstrates competence**
3. **Mastered**

EVALUATION WORKSHEET

Unit: _____

Sub-unit: _____

Core Area: _____

Instructional Objectives	Student's Name: _____ 1 2 3	_____ 1 2 3	_____ 1 2 3	_____ 1 2 3	_____ 1 2 3	TEACHER NOTES

1. Does not demonstrate competence
2. Demonstrates competence
3. Mastered

UNIT: WEATHER

Appendix A: Sub-Unit Assignments

UNIT: WEATHER

Appendix A: Sub-Unit Assignments

Leslie Drummond
Sandra Hale
Norma Heys
Molly Siddaway King
Sandy Visser
Anne Woodruff

"END OF DOCUMENT"